

AN EVALUATION OF THE PRESCHOOL  
HEALTH CHECK PROGRAM

CENTRE FOR NEWFOUNDLAND STUDIES

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**AN EVALUATION OF  
THE PRESCHOOL HEALTH CHECK PROGRAM**

**by  
Moirá O'Regan-Hogan**

**A Thesis Presented  
to the School of Graduate Studies  
in partial fulfillment of the  
requirements for the**

**Degree of Master of Education**

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## ABSTRACT

A primary consideration in health care today is the escalating cost of health services and the recognition that there is need to identify ways of delivering quality care at a lower cost. As competition for scarce service dollars grows, the benefits of conducting an evaluation of a program's effectiveness are becoming increasingly apparent.

This study involved an evaluation of the Preschool Health Check Program in the St. John's and District Health Unit utilizing a descriptive methodology and focusing on program design and process to determine relevance, currency and comprehensiveness. Five separate questionnaires were developed to elicit information concerning the design and process of the program from a variety of groups including Public Health Nurses, Referring Agencies, School Personnel, Key Informants and Parents of Preschool Children. Preschool health screening practices in other provinces were assessed through administration of a questionnaire to Representatives of Provincial and Territorial Departments of Health. A computerized literature search was conducted relative to preschool screening and the specific screening components of vision, hearing, behavior/emotion, speech/language and development contained in the Preschool Health Check Program. Program and followup data were analyzed together with clinic attendance statistics.

To contribute to the utility of the evaluation and to ensure that data analysis regarding the interpreting and summarizing of results was not conducted in isolation, focus group interviews were held with appropriate public health nursing personnel within the St. John's and District Health Unit. As well, telephone contact was made with the Directors of Nursing of the other Health Units in the province to discuss the current status of the Preschool Health Check Program in their area and to identify issues pertaining to the Program.

A total of twenty-two recommendations were developed based upon analysis of the findings from these data sources. Of prime consideration was the identification of a need to develop a coordinated and comprehensive public health nursing assessment program for infant and preschool children at risk which would target those children identified at risk during the infant and early preschool period.

It is anticipated that the recommendations resulting from this Study will assist program managers in decision making related to future resource allocation in the area of child health programming.

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## CHAPTER 1

### INTRODUCTION

Professionals in health, education and related fields have long identified the need for screening, early detection and prevention of conditions negatively affecting child development, behavior and school performance. Preschool screening is an attempt to identify children with current developmental and other problems, given the assumption that these problems will subsequently interfere with school performance if they are not remediated. Estimates of the prevalence of these problems vary from 15 - 30 percent (Cadman et al., 1987).

The perceived need for preschool screening evolved from the recognition that many children who experience learning problems also suffer related developmental, sensory, physical, social-emotional or family problems. These conditions appear to predate school problems and render children more vulnerable to school failure. The patterns of failure become more firmly entrenched over time. Lichtenstein and Ireton (1984) report that case histories of children with substantial problems typically reveal early indications of their need for some special assistance. These needs are often disregarded or receive insufficient attention until a crisis state is reached. By then problems



have become severe, prospects for remediation are less hopeful and self-sustaining cycles develop: the failing child lacks expectations of success, loses motivation, withdraws from academic pursuits, and experiences further failure. The long-term consequences involve societal costs relative to services required (e.g. special education, child welfare, corrections) and loss of productivity, coupled with immeasurable personal losses in terms of intellectual and social/emotional development.

An obvious alternative is to act sooner to provide special help for these children through early intervention programs. Hobbs (1975) describes the rationale for such programs:

Prevention is more effective and more economical, as a rule, than repair; it is better to identify problems early and correct them promptly than to let them grow until a crisis requires action. Indeed, for many developmental functions (such as hearing handicaps), undue delay in treatment may lead to irreversible developmental damage (pp. 89-90).

In order to pursue a policy of early intervention, children's problems must be identified at an early point so that intervention can be implemented to change the course of the problematic situation or condition. Early identification programs for preschool children are sponsored primarily through the Department of Health or jointly through programs co-sponsored by both the Department of

Health and the Department of Education. In Newfoundland the Public Health Nursing Division of the Department of Health is responsible for the delivery of health promotion, health protection and health prevention programs through Child Health Clinic Services. Since 1988, such services have been provided to families with preschoolers through the Preschool Health Check Program.

The Preschool Health Check Program is one component of the Provincial Health Check Program which involves a series of health assessments targeting families with children aged 2 months, 4 months, 6 months, 12 months, 18 months and preschool. The Preschool Health Check Program is delivered by Public Health Nurses through Child Health Clinic Services on a year round basis to all children approximately four years of age. This program replaced the Health Assessment at School Entry (HASE) Program which was conducted on preschool children.

The Preschool Health Check Program is based upon a special set of beliefs and values about preschoolers, their parents, health and community health nursing (See Appendix A). The goals of this program include:

- (1) health promotion - To foster and reinforce the achievement of healthy lifestyles, sound health practices and behaviours, and positive adjustments to developmental changes of preschoolers;
- (2) health protection - To protect preschoolers from selected environmental hazards, communicable

diseases, injuries and family violence;

- (3) health problem prevention - To prevent and limit the onset, duration and effect of specific health problems of preschoolers and their families, as well as early identification of health issues, and
- (4) community support services - To facilitate the development and use of appropriate services for preschoolers and their families within the community.

In developing this program the target age group for the assessment was set at 3 years 9 months to 4 years 2 months in order to provide a balance between cooperation of the child with the assessment procedures and the length of follow-up time available prior to school entry. The assessment was developed with flexibility to permit the assessment of any child prior to school entry (under age six) with slight modifications/variations in assessment procedures. The target population was to be accessed through Child Health Clinic and postnatal follow-up records, school registration, nursery school and day care centres, promotion of the program at the 18 month Child Health Clinic visit and through the media promotional activities.

The Preschool Health Check Program involves a 1 hour assessment of the preschool child by a public health nurse. The following components are assessed during this process: history, immunization, nutrition, behavior/emotion, growth, physical, vision, hearing, speech and language, dental, development and the need for anticipatory guidance. A

Preschool Health Check Manual has been developed to provide guidance and resources to assist the public health nurse in conducting the preschool health assessment. The manual provides a detailed description of the Preschool Health Check Program, its goals and guidelines and the beliefs and values upon which it is based. The manual outlines the requirements of the clinic setting in which the program is to be conducted, provides an equipment list and supplies a detailed description of the purpose and screening procedures used to assess each component of the program. In addition, samples of all forms and resources required are recorded, as well as suggestions for record keeping, filing and guidelines for follow-up. A variety of resources are available to supplement the manual for training and continuing education purposes.

#### Statement of the Problem

In Newfoundland prior to 1988, preschool health screening by Public Health Nurses was conducted at age 3 years and again just prior to school entry; however, this time frame was not consistent throughout the province. Health regions providing the 3 year old check up reported that 3 year old children were difficult to screen and, as such, a significant amount of nursing time was spent

rebooking children to complete the assessment. Health regions providing assessments just prior to school entry reported that children referred to various specialists for follow-up were not able to access these services prior to entering school as the time period was too short. Due to inconsistencies in the delivery of the preschool assessment program, data collection was compromised and the program could not be properly evaluated. This scenario resulted in a decision to standardize the method of preschool screening. The age for assessment was changed to occur between the ages of 3 years 9 months and 4 years 2 months. This change in age resulted in changes with some of the screening instruments. Such a process entailed review of the literature and consultation with specialists to ensure both accuracy and age appropriateness of the screening tools chosen.

To ensure standardization regarding assessment content and documentation format, a two-day training session for all Public Health Nurses was conducted prior to the implementation of the program in the Spring of 1988. As the Department of Health had intended to evaluate the program following a two-year implementation period, data regarding outcomes of screening and follow-up were collected from all Public Health Nurses in the Province. Due to lack of resources, an evaluation of the Preschool Health Check

Program was not conducted as intended. Through objectives established by the Provincial Quality Assurance Committee of the Department of Health, provisions were made to evaluate the Preschool Health Check Program in the St. John's and District Health Unit during the Fall 1993.

#### Purpose of the Study

This Study involved an evaluation of the Preschool Health Check Program in the St. John's and District Health Unit. Specifically, it evaluated the program design and process to determine relevance, currency and comprehensiveness.

#### Significance of the Study

A primary consideration in health care today is the escalating cost of health services and the recognition that there is a need to identify ways of delivering quality care at a lower cost. As competition for scarce service dollars grows, the benefits of conducting an evaluation of a program's effectiveness are becoming increasingly apparent. The literature abounds with evidence that school problems and associated difficulties are hard to treat once established (Cadman et al. 1988; Hewison 1982; Zigmond 1978)

and thus, predictions of risk, prevention and early treatment have become important goals of health and education professionals working with young children.

Through this program evaluation, data regarding program design and process were assessed and analyzed in relation to preschool health assessment. It is anticipated that the resulting recommendations will assist program managers to identify how effectively their dollars are being spent so that decisions can be made regarding where such resources might be reallocated in the future.

#### Delimitations

This Study is delimited to conducting an evaluation of the Preschool Health Check Program within the St. John's and District Health Unit through use of a descriptive methodology. Particular emphasis was placed upon the program design and process. Outcome measures were not able to be specifically evaluated due to the long term nature of health promotion outcomes and also due to the lack of computerized data collection methods resulting in an inability to track individuals, to effectively compare results and to accurately extrapolate findings. Additional attention was focused on the concept of preschool screening in general and on the specific screening components

contained within the program.

### Limitations

Several factors may have a limiting effect on the validity, reliability, and generalizability of the findings of this Study. These factors relate to: (1) time restraints; (2) geographic focus; (3) variability in the age of children screened; and (4) dependence on the cooperation of respondents.

#### 1. Time Restraints

Due to the short time frame of three months allotted for this program evaluation, it was not deemed possible to conduct face-to-face interviews with focus group participants from the various population segments to be surveyed. Rather, the majority of data were collected from these groups through the administration of telephone surveys and mailed questionnaires. Focus group interviews were conducted with Nurse Managers and the Child Health/School Health Coordinator of the St. John's and District Health Unit to discuss issues specific to their roles.

#### 2. Geographic focus

The Study focused its attention on the



areas/communities contained within the boundaries of the St. John's and District Health Unit including St. John's, Mount Pearl, Bell Island, Portugal Cove, Pouch Cove, Torbay, St. Phillips, Paradise, Logy Bay/Outer Cove/ Middle Cove, Southern Shore. This Health Unit was one of five across the Province. As the geographic focus of this evaluation was contained within the boundaries of the St. John's and District Health Unit and because this Health Unit encompassed a predominant urban core with unique problems relating to issues such as motivation of clients to access preventive programs, increased mobility of the population between various localities within the district boundaries, access to referring agencies, etc., recommendations resulting from this evaluation will not be generalized to other Health Units within the Province.

3. Variability in the age of children screened

The St. John's and District Health Unit implemented the Preschool Health Check Program in 1988 according to the guidelines developed for the screening of children aged 3 years 9 months to 4

years 2 months. This screening age was maintained until 1991 at which time the Administration of the Health Unit, upon review and analysis of clinic statistics, made the decision to increase the screening age to 4 years 4 months to 4 years 6 months for urban nursing districts within the Health Unit. The rationale for this decision was based upon a variety of factors including: a lengthy wait list for preschool screening resulting from a large percentage of children requiring retests; the existence of several clinic sites which were not adequate for screening (the majority have since been upgraded/new sites located); and the lack of relief for nursing staff (ie. annual leave, sick leave, etc.). The variance in the age of screening will be reflected in data collected following the change in 1991 (ie. all data collection methods except clinic statistics, outcome and follow-up program data). Thus, results from the Public Health Nurse, Parent, Referring Agency, School Personnel and Key Informant Questionnaires will reflect preschool screening practices at 4 years 4 months to 4 years 6 months, not 3 years 9 months to 4 years 2 months as the program was originally designed.

4. Dependence on the cooperation of respondents

This Study was dependent on the return of mailed questionnaires.

Operational Definitions

Definitions of a number of terms used in this Study are provided to ensure their specific meaning in this context.

**Early Identification**

Systematic efforts to move up the point in time when problems are identified. Early refers not to the child's age as much as to the stage of the child's problem (Lichtenstein and Ireton, 1984).

**Early Intervention**

The process of intervening at an early point to alter the course of a problematic condition or situation (Lichtenstein and Ireton, 1984).

**Process**

The activities of a program which are designed to produce change(s) in an individual.

**Program Evaluation**

A planned sequence of steps or parts that all contribute to arriving at a judgement about the status or value of the activity (Dignan, 1989).

**Screening**

The activity of searching for potential health problems among apparently healthy individuals (Cadman et.al., 1987).

**Urban**

The population residing within the boundaries of the cities of St. John's and Mount Pearl.

**Rural**

Includes the populations contained within the boundaries of the following communities/areas: Bell Island, Portugal Cove, Pouch Cove, Torbay, St. Phillips, Paradise, Logy Bay/Outer Cove/Middle Cove, and the Southern Shore (Bay Bulls, Witless Bay, Mobile, Tors Cove, Burnt Cove, St. Michael's, Bauline, La Manche, Cape Broyle, Admirals Cove, Calvert, Ferryland, Aquaforte, Kingmans Cove, Cappahayden, Portugal Cove South, Biscay Bay, Trepassey, Daniels Point, St. Shott's)

## Organization of the Thesis

Chapter 1 has outlined the evaluation undertaken for this Study in terms of its purpose and significance, limitations and delimitations and operational definitions. Chapter 2 presents an overview of the related literature. The area of preschool screening is explored, basic assumptions presented and early identification and intervention programs are reviewed. The concept of evaluation as it relates to health education and health promotion programs is presented as well as an historical overview of evaluation and exploration of background principles. Program evaluation is defined and its scope and focus is reviewed together with a discussion of specific evaluation criteria and presentation of an evaluation strategy.

Chapter 3 outlines the design of the Study. Details relating to placement and duration of the Study are provided, the methodology is discussed and the various data collection methods utilized are presented. Information regarding population and sample are provided, validity is discussed and decisions regarding treatment of the data are outlined. Chapter 4 focuses on analysis of the data and is divided into three major sections. The first section deals with presentation of reviewed literature in terms of the

various screening components - vision, hearing, behavior/emotion, speech/language and development. The second section includes a description of each questionnaire and a detailed reporting of the results obtained from the administration of each questionnaire. The final section reviews clinic attendance statistics and outcomes of screening and follow-up. Chapter 5 includes the summary, conclusions and recommendations. This information is presented in a discussion format in which recommendations for action flow from the discussion. Recommendations for further research are also provided.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### Preschool Screening

During the past twenty years, preschool screening has received a tremendous amount of attention, resulting in the publication of countless books and articles on the subject, as well as the development of numerous screening tools. According to Feightner (1990), most researchers tend to focus their attention on three to five year old children and on specific developmental factors that may affect subsequent school performance and behaviour. Problems of child development, behavior and school programs have been identified as major components of childhood morbidity in North America (Nader, 1975; Nader et al. 1981; Green, 1983; Boyle et al. 1985).

Accurate data describing the prevalence of school performance problems are difficult to obtain as estimates are affected by the socioeconomic status of the populations studied, the definition of "school problems" employed in the study, as well as the stage in the child's education when outcomes are measured. Estimates of the prevalence of school performance problems cited in the literature range from a low of 6% (Barnes, 1985) to a high of 30% (Cadman et

al. 1987) with numerous estimates in the 15 to 30% range (Nader and Brink, 1981; Boyle et al. 1985). These problems have received an enormous amount of attention due to the high value society places on education and school performance.

### Basic Assumptions

The concept of preschool screening has been motivated, in large part, by the following assumptions (Feightner, 1990; Lichtenstein and Ireton, 1984):

1. that children with developmental problems can accurately be identified as the problems are initially emerging, or before clinical manifestation;
2. that early intervention produces a significant positive effect, and
3. that early identification and intervention programs can be implemented without prohibitive or exorbitant costs and may prove more economical than the treatment of long-standing problems.

### Early Identification and Intervention Programs

Articles relating to preschool assessment, preschool development and early identification and intervention programs for preschool children number well into the thousands when both medical and educational literature are reviewed. Lichtenstein and Ireton (1984) as well as



Frankenburg (1985) have published an exhaustive review of the literature and data concerning preschool screening. They report that in general, measurement instruments are inadequately evaluated and of the studies that claim to assess program and intervention, few have been comparative and only three have employed a trial design. Most programs documented, like the Head Start Program, have been population-based and targeted at disadvantaged groups (Brofenbrenner, 1974; Mann et al., 1978; Chang et al., 1979; Zigler and Valentine, 1979). Although analysis of such programs can assist in reviewing the impact of interventions, extrapolation is necessary to assess the value of similar approaches for children identified in other ways. Few studies focus on evaluating interventions aimed at individuals identified through preschool screening as having problems.

A number of programs are aimed at improving either specific or general deficits in school performance. Within this grouping, reading performance received the widest attention, although according to Feightner (1990), only two methodologically acceptable studies could be identified from the literature. Both of these studies involved specific interventions for school-aged children and while the results are promising, they do not provide sufficient evidence for a generalized adaptation of such strategies as interventions

(Arnold et al. 1977; Gittleman and Feingold, 1980).

The literature describes only one randomized controlled trial to assess early detection combined with intervention in a preschool population (Cadman et al., 1987). The researchers studied a public health preschool child developmental program in Ontario. At this clinic Public Health Nurses administered a general health interview, determined immunization status, tested hearing and vision and administered the Denver Developmental Screening Test (DDST). For this study, children at the DDST "station" were randomized to one of three groups: the DDST, counselling, referral and follow-up group; the DDST only group; or the no DDST group. Results of this study demonstrate that the screening, counselling, referral and follow-up program was not effective in meeting the goals of improving school performance, developmental attainment or behavioral/emotional outcomes for children in early school years. At the end of the third school year, no differences were found between positive screenees in the intervention group and the no intervention group based upon individual academic achievement, cognitive and developmental tests. Furthermore, an increased rate of parental worry was evidenced by parents of children who received the intervention program of counselling, referral and follow-up. The authors acknowledged that such worry may be interpreted

as appropriate awareness or as a potentially harmful labelling effect which may represent a common side effect of mass screening (Johnston et al., 1984).

### Program Evaluation

In this section the concept of evaluation as it relates to health education and health promotion programs will be presented. An overview of the historical development of evaluation is provided through a review of background principles underlying evaluation. Program evaluation is defined, its scope and focus is discussed, specific evaluation criteria are reviewed and an evaluation strategy is outlined.

### Historical Development

Systematic, data-based evaluations are a relatively modern development coinciding with the growth and refinement of social research methods as well as with ideological, political and demographic changes during this century. Commitment to the systematic evaluation of programs in such fields as education and public health can be traced to efforts at the turn of the century to provide literacy and occupational training by the most effective and economical

means and to reduce mortality and morbidity from infectious diseases (Fleck, 1961).

As far back as the 1930's there were social scientists who advocated the application of rigorous social research methods to the assessment of programs (Freeman, 1977). Its employment increased during World War II when Stouffer and his associates worked with the U.S. Army to develop continual monitoring of soldier morale and to evaluate personnel and propaganda policies. At the same time, a host of smaller studies assessed the efficacy of price controls and campaigns to modify American eating habits (Rossi and Freeman, 1982).

The period immediately following World War II saw the beginning of large-scale programs designed to meet needs for urban development and housing, technological and cultural education, occupational training and preventive health activities. It was also during this time that major commitments were made to international programs for family planning, health and nutrition and community development. Expenditures were huge and consequently were accompanied by demands for knowledge of results.

By the end of the 1950's, large-scale evaluation programs were commonplace (Blalock, 1976). Knowledge of the methods of social research, including the survey and complex statistical procedures became widely known. Computer

technology made it possible to conduct widespread studies and undertake sophisticated statistical analyses. During the 1960's, papers and books on the practice of evaluation research also grew dramatically. By the late years of the decade and into the 1970's evaluation research had become a growth industry. Books, journals and periodicals chronicling evaluation research were published, including Evaluation News, Evaluation and the Health Professional, Journal of Evaluation and Program Planning and New Directions for Program Evaluation.

The proliferation of publications and conferences, the formation of a professional association - The Evaluation Research Society and special sessions on evaluation studies at the meetings of academic and practitioner groups are testimony to the rapid development of the field. Such efforts to improve, refine and reform evaluation activities continue today. Cronbach (1990) states that "evaluation has become the liveliest frontier of American social science".

While there is continuity in the development of the evaluation field, a definite change has occurred. In 1963, Schuman's definition of evaluation research as "the application of social research techniques to the study of large-scale human service programs" was useful and sufficient. Today however, it is clear that evaluation research is more than the application of methods. It is

also a political and managerial activity, an input into the complex mosaic for which policy decisions and allocation for the planning, design, implementation and continuance of programs to better the human condition exists. In this sense, evaluation research needs to be seen as an integral part of the social policy and public administrative movements.

### Definition

Evaluation is a term which can have a variety of meanings. The myriad of uses of evaluation may make the basic meaning obscure. The literal meaning of the verb "to evaluate" is to estimate the value of some object or activity. When applied to health education and health promotion programs, evaluation is a planned sequence of steps or parts that all contribute to arriving at a judgement about the status or value of the activity (Dignan, 1989). Simply stated, evaluation is a process of inquiry into the performance of a program.

According to Dignan and Carr (1987), this definition includes three concepts that are basic to understanding evaluation. First, evaluation is inquiry. Flexibility is a key element to producing evaluations that address important questions about programs. Second, evaluation is focused on

assessing the performance of a program. The third concept is that evaluation is usually based on a standard of comparison. Translating this concept into action is often the most challenging task because to be effective, evaluation must focus on a clear indicator of success or failure of the program. Such indicators are developed as an answer to the most basic evaluation question: What would we expect to observe if the program functioned as intended? The answer may focus on outcomes such as increased knowledge, better access to services, healthier lifestyles or many other changes, depending upon the specific goals and objectives of the program (Green and Lewis, 1986).

### Role of Evaluation

The role of evaluation in the life of a program may vary. However, according to Weiss (1982), two basic roles are implied by the terms formative and summative evaluation and the distinction between these two types of evaluation lies in the motivation for the evaluation.

#### Formative Evaluation

Formative or monitoring evaluation determines the extent to which the plan of action is implemented as

designed - it is intended to generate feedback for the development of a program. Formative evaluation occurs at various intervals throughout the implementation process. According to a position paper developed by the Association of Registered Nurses of Newfoundland 1992 entitled "Program Development and Evaluation in Nursing Practice", a formative evaluation is required:

- . where program grants are awarded,
- . where projects are implemented for the first time,
- . and where major changes occur in the environment concurrently with program implementation or as a result of the program (i.e., economic cutbacks, introduction of a new technology, etc.).

#### Summative Evaluation

Summative or effectiveness evaluation is intended to judge the performance of a program that is developed and implemented. It determines the extent to which the program objectives have been achieved. Summative evaluation occurs at the completion of the implementation of the program.



Scope of Evaluation**Purposes and Uses**

Evaluation may be undertaken for a variety of reasons (Chelimsky, 1978)-- for management and administrative purposes, to assess the appropriateness of program changes, to identify ways to improve the delivery of interventions, or to meet the accountability requirements of funding groups. It may be undertaken for planning and policy purposes, to test innovative ideas on how to deal with human and community problems, to decide whether to expand or curtail programs and to support advocacy of one program as opposed to another. Finally, evaluation may be undertaken to test a particular social science hypothesis or a professional practice principle. Regardless of the purpose for the evaluation, the key is to design and implement an evaluation that is as objective as possible so as to provide a firm assessment that would be unchanged if the evaluation were replicated by the same evaluator or conducted by another group. Rossi, Freeman and Wright (1979) note that not only do evaluations differ according to their purpose, the uses to which they are put also vary.

Regardless of the point of view taken, Dignan (1986) states that several questions are basic to program

**evaluation:**

1. Should this program be continued in its present form?
2. How can practices and procedures be improved?
3. What methods or activities produce the best results?
4. Can this program work in other places?
5. How much money should be spent on this program?
6. Do the results of the evaluation support or refute the theory underlying program efforts toward effecting change in the target population?

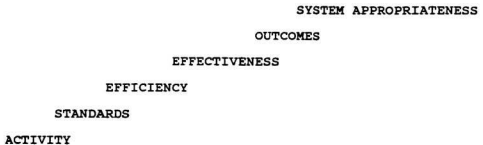
**Levels of Evaluation**

It is common to think of evaluation as always being concerned with measuring such things as how well individuals learned something or changed their behaviour. Some programs however, may be evaluated by counting the number of persons served, while other programs consider how well they fit in with related programs serving the same community. Evaluation can be focused on different aspects of the program, the people it serves, or the overall system of health care (Dignan, 1989).

Blum (1974) cites six levels of evaluation which are arranged in order of difficulty and in order of depth of

assessment of program accomplishments. The job of the evaluator changes with movement "up" the level as the number of factors increase and the questions become more abstract. (See Figure 1).

**Figure 1 Levels of Evaluation**



**Activity:** The first level encompasses the collection of evidence that demonstrates whether the program is going on as planned. Evaluation is focused on whether personnel are in place to conduct the program and whether the necessary activities involved in accomplishing program objectives are being carried out. This level is often used to keep administrative tabs on developing programs and is usually followed by more extensive scrutiny of program activities.

**Standards:** Evaluations seek to determine whether the program is functioning as designed according to standards. The standards used in assessment on this level usually lead

to consideration of accessibility of the program to the target population, control over costs and other criteria measures of the delivery of services.

**Efficiency:** Program efficiency in health education and health promotion, according to Dignan (1986), is "determined by the provision of planned services to a sufficient number of individuals utilizing predetermined resources and personnel". The question posed is straight forward: Is the outcome reasonable in light of the resources invested?

**Effectiveness:** This is a very important and challenging focus of evaluation. Evaluation of effectiveness asks if the program's activities are producing the results promised. Questions are based upon the program objectives.

**Outcome validity:** When evaluation is focused on outcome validity, the questions asked are directed at the effects of the program as a whole. The question is not whether the program objectives were met, but whether meeting the objectives resulted in the outcome planned i.e. whether the program produced what was expected.

**Overall system appropriateness** This is the most global focus for evaluation. It assesses how well the program fits with programs with similar goals, how well the program fits with the system of community health programs, and the extent to which the goals of the program are "good" for society.

## Focus of Evaluation

Regardless of the purpose or level of evaluation, it should be focused in terms of:

1. the types of information that will be accepted as evidence of the effects of the program;
2. the role or roles that the results of the evaluation may play in the operation of the program;
3. the extent of the need to protect the evaluation from bias;
4. the type or types of criteria that will be used in the evaluation (Dignan and Carr, 1987).

## Evaluation Criteria

Criteria used in evaluating a program are the standards against which a program's performance is measured. Standards may be planned into the program as part of the objectives, introduced as a result of funding from an outside source, or they may be determined administratively based on agency expectations (Weiss, 1982). Thus, a critical component of the evaluation process involves the decision regarding evaluation criteria. The literature indicates two types of evaluation criteria in community health: criteria specifying effects on clients of the agency and criteria specifying effects on the agency itself.

Perhaps the most common types of evaluation criteria are those dealing with the effects programs have on their clients. Green (1977) notes that in health education, evaluation criteria should be focused on effects on clients (including all the different components of behaviour changes). Evaluation criteria dealing with effects on agencies are related to institutional changes that have occurred as a result of the implementation of a program (Dignan and Carr, 1987). These criteria are usually oriented toward the agency and staff members' relationship with clients.

Regardless of whether evaluative criteria address changes in the client or the agency, all evaluative criteria should deal clearly with process, impact, and/or outcomes (Blalock and Blalock, 1976). Process is the term used to describe the activities of a program that are designed to produce behavioral change(s) in the client. Impact is the specific effect on the client resulting from program activities. Outcomes are the effects that the impact of the program may have on the client over time (Shortell and Richardson, 1978).

Evaluation can be designed to assess process, impact and/or outcomes. When evaluation is directed toward process, the assumption is that if the process is as designed, then the effect on the client is predictable. For

this reason, in addition to the fact that it is often much easier to evaluate process than impact or outcomes, many administrators who ask for program evaluation desire process evaluation (Hayes, 1986).

Impact evaluation is designed to determine whether the methods and activities used in the program resulted in the desired immediate changes in the client. Green, Kreuter, Deeds and Partridge (1980) report that impact evaluation is the most important type of evaluation of health education and health promotion activities and should always be a primary focus for program evaluators.

Outcomes are usually the most difficult to evaluate as they involve follow-up consultation of clients and assessment of their application of the program content (Green and Lewis, 1986).

Program objectives specify evaluative criteria (Hayes, 1986). Planning for evaluation as a part of program planning encourages the formulation of sound objectives. If these objectives are thoughtfully and carefully developed, evaluation will be facilitated. To be useful in evaluation, objectives must specify the behaviours or accomplishments to be examined and how the behaviour or accomplishment is to be measured.

### An Evaluation Strategy

Through the previous sections of this literature review the researcher has attempted to lay a foundation of information about evaluation. To assist in an effective program evaluation, Dignan and Carr (1987) have developed five essential basic steps:

1. Clarify goals and objectives
2. Determine evaluative criteria
3. Select appropriate design
4. Plan for data collection
5. Plan data analysis and reporting.

According to this strategy, the first step in program evaluation is to produce a detailed description of the program as it currently exists and to specify the objectives with which the program operates. Once the objectives have been established and the program has been described in sufficient detail to be thoroughly understood, evaluation criteria can be determined. If the program plan was conceived and written with care, this step is simplified. The key to developing useful evaluation criteria is to design them so that no confusion exists about measurement or data collection and interpretation is clear.

Once criteria are determined, procedures for conducting the evaluation can be developed. As mentioned previously,



many different designs may be applied. In developing evaluation procedures, the design of the evaluation must be selected and all tasks and issues relating to conducting the evaluation must be addressed. The fourth step in this plan is to collect data to assess the extent to which the evaluation criteria have been met. The key to successful completion of this phase is systematic collection of data. Following data collection, the procedures which were specified in the third step for analysis can be applied. The basic question to be answered by the analysis is how the data collected from the program compared with the evaluation criteria. The analysis should indicate where the program met criteria for success as well as identifying components that need improvement.

The report should be organized to explain how the program was evaluated, what questions were to be addressed and what was the outcome. The intended readers of the report must be taken into consideration when writing the report. It is generally most important to discuss the effects the program had on the target population and the extent to which goals and objectives of the program were reached.

## Conclusion

The reviewed literature has focused on the issues pertaining to preschool screening in general and the assumptions underlying early identification and intervention programs. The basic assumption that unremediated problems become more serious and more intractable over time is generally accepted. Given this assumption, the value of early identification hinges upon the ability to accurately identify children with such problems and to provide remedial services at an affordable cost.

The Preschool Health Check Program offered through the Provincial Department of Health's Public Health Nursing Division, involving a health assessment of preschool children is also based upon specific beliefs and values. To assist in evaluating this program, the researcher conducted a review of program evaluation literature relative to health education and health promotion programs.

Dignan (1989) defines evaluation of health related programs as a planned sequence of steps or parts that all contribute to arriving at a judgement about the status or value of the activity. This definition can be simplified to describing evaluation as a process of inquiry into the performance of a program. To determine the role of an evaluation, formative and summative evaluation were outlined

and the motivation for each in the life of a program was explored. Basic questions common to all program evaluations were presented and various levels of program evaluation were provided from the 1974 work of Blum. Evaluative criteria were discussed and an evaluation strategy developed by Dignan and Carr (1987) was examined. The combination of this material serves to provide a good theoretical background for the evaluation of the Preschool Health Check Program.

## **CHAPTER 3**

### **DESIGN OF THE STUDY**

#### **Placement and Duration**

This Study took place in the Community Health Division of the Department of Health, West Block Confederation Building during the period of time August 2, 1993 to October 29, 1993 inclusive. As Research Assistant for the Project, the researcher worked under the direction of the Provincial Quality Assurance Subcommittee on Public Health Nursing in the Department of Health.

#### **Methodology/Data Collection**

This Study involved a descriptive model of research in which the objective for the Study (Stated in Chapter 1) was met through a variety of data collection methods. A comprehensive review of current public health/medical and educational literature and data (MEDLINE and ERIC computer searches) was conducted relative to the specific screening components contained within the Preschool Health Check Program (i.e. vision, hearing, speech/language, behavior/emotion and development). Preschool Health Check Program outcome and follow-up data for the 1990-1991 fiscal

year were analyzed together with Preschool Health Check clinic attendance statistics for the same time period. Preschool health screening practices in other Provinces were documented and the design and process of the Preschool Health Check Program were determined through the administration of specific questionnaires to Public Health Nurses, various School Personnel, Referring Agencies and significant Key Informants. In addition, a telephone survey was conducted to elicit parent response to the program. The Regional Directors of Nursing for each Health Unit within the Province were contacted by telephone to ascertain an update regarding the status of the Preschool Health Check Program in their region. Nurse Managers and the Child Health/School Health Coordinator with the St. John's and District Health Unit participated in focus group interviews following preliminary analysis of the questionnaire data, to discuss in detail, specific issues relating to the program. Copies of questionnaires, surveys and the guidelines for the focus group interview are contained in Appendix B.

#### Population/Sample

##### Public Health Nurse Questionnaire

The Public Health Nurse Questionnaire was mailed to all Public Health Nurse I's (PHNI's) in the former St. John's

and District Health Unit who conducted Preschool Health Check Clinics on a regular basis (n=32).

#### Referring Agency Questionnaire

A total of thirty-eight (38) questionnaires were mailed to a stratified sample comprising health professionals from those agencies to whom Public Health Nurses refer children from the Preschool Health Check Program.

#### School Personnel Questionnaire

The School Personnel Questionnaire was mailed to a proportional stratified sample of fifty-eight (58) education professionals representing both urban and rural schools and major school boards within the boundaries of the St. John's and District Health Unit.

#### Key Informant Questionnaire

The Key Informant Questionnaire was mailed to a small convenience sample (n=9) of individuals working in areas related to child development and intervention.

#### Parent Questionnaire

The Parent Questionnaire was administered by the researcher via telephone interviews to a total of seventy (70) parents of children born in 1987 who attended the

Preschool Health Check prior to starting kindergarten in 1992 and who were in Grade 1 during Fall 1993. This random sample included a rural/urban mix of 20/50.

### Inter-Provincial Survey

An Inter-Provincial Survey was sent to Provincial and Territorial Departments of Health (Community Health Division).

### Validity

Items in each of the questionnaires were initially developed based upon a review of related literature and the researchers own experience as a Public Health Nurse who has had several years experience associated with the delivery of the Preschool Health Check Program. Additional assistance regarding refinement of questionnaire items in terms of content, clarity, precision and appropriateness was requested and received from: the Provincial Parent and Child Health Consultant, the Provincial Director of Public Health Nursing, members of the Provincial Quality Assurance Subcommittee on Public Health Nursing, and Nurse Managers and the Child Health/School Health Coordinator with the St. John's and District Health Unit. Revisions were based upon the input from these content experts.

## Treatment of Data

Each of the questionnaires was reviewed and a data entry coding scheme was developed. A separate database file and program was created for each group of questionnaires. The coded information was then entered into the computer and descriptive statistics were tabulated through use of the SPSS-PC Program.

Focus group discussions with the Nurse Managers and the Child Health/School Health Coordinator were tape recorded. Major themes and implications for program delivery were extracted from the recording and included in the discussion of results.

The Provincial Quality Assurance Subcommittee on Public Health Nursing reviewed the methodology and instruments for the Preschool Health Check Program Evaluation.



## CHAPTER 4

### ANALYSIS OF THE DATA

This chapter provides an overview of methodologically sound studies pertinent to the specific screening components of the Preschool Health Check Program (vision, hearing, behavior/emotion, speech/language and development). This is followed by a presentation of the description and results for each of the six questionnaires developed for this Study: Public Health Nurse; Referring Agency; School Personnel; Key Informant; Parent, and Inter-provincial. Preschool Health Check Clinic Attendance Statistics for 1990-1991 and 1990-1991 Outcomes of the Screening and Follow-up Data are presented and discussed in this chapter. Implications of these results are incorporated into the discussion and recommendations included in Chapter 5.

#### Screening Components

##### Vision Screening

The goal of preschool vision screening is to detect children with visual problems for which early treatment is necessary to achieve a good outcome (Ruttum and Nelson, 1991). Preschoolers are usually unaware of their problem

because they are too immature to recognize that limitations or changes in their vision are abnormal, or they are simply unable to verbalize their problem. Parents of affected children rarely detect the presence of reduced vision as, in most cases, there are no external signs suggesting an abnormality and there are no symptoms (Brierley, 1986). According to Appelbloom 1985, preschool vision screening is justified as vision problems meet many of the criteria for screening - they are highly prevalent, affect well-being, are correctable, are detectable by valid, reliable and acceptable tests at a reasonable cost, and children with detected problems can be treated with good results. By detecting visual impairments in preschool children, adequate therapy can be initiated thereby correcting deficits that may otherwise interfere with the child's development, academic and social achievement and socialization.

Vision screening for preschool children is primarily aimed at detecting three conditions: refractive errors (myopia, hyperopia and astigmatism); amblyopia and strabismus (Appelbloom, 1985; Friendly, 1987). Based on data from two Ontario communities where preschool screening has occurred, the prevalence of visual defects is probably in the range of 10% (Feightner, 1990). Research indicates that 3% of preschool children exhibit hyperopia or astigmatism (Fletcher, 1982; Appelbloom, 1985; Friendly,

1987). Amblyopia which generally results in a unilateral, progressive deterioration of visual acuity if untreated, has a prevalence of between 2% and 4% in children aged 4 to 6 years (Cross, 1985; Friendly, 1987). Early intervention, preferably before age 5, can reverse visual deficits in whole or in part. This reversibility diminishes with age and amblyopia is essentially untreatable beyond 8 years of age (Brierley, 1986). Strabismus, with a prevalence of 2.4% in preschool children, occurs predominantly before age 5 years and requires early detection to derive the greatest benefit from treatment (Cross, 1985).

A review of the literature yielded one methodologically sound study addressing the issue of the effects of preschool vision and hearing screening (Feldman, Sackett, Milner and Gilbert, 1980). This study, conducted in Ontario, looked at whether preschool children who had been screened for vision and hearing defects had fewer problems 6 to 12 months later. The study demonstrated that vision screening was associated with 50% fewer vision problems overall and 79% fewer moderate to severe vision problems 6 to 12 months after the screen.

### Hearing Screening

When quoting prevalence rates for hearing deficits, one must be careful to distinguish between reports of transitory hearing problems associated with upper respiratory infections and those hearing problems which persist over time. Preschool hearing deficits severe enough to require special care are reported to be in the range of 3%, while reports of hearing deficits resulting from a single assessment are 15% (Feightner, 1990).

Cross (1985), reports that the overwhelming majority of hearing deficits found in preschool and school-age children are conductive losses resulting from middle ear disease, and at any given time about 5% to 7% of children age 5 to 8 years have a 25-db hearing loss, usually a self-limiting complication of otitis media with middle ear effusion. Only a small proportion of new school-age cases result in serious long term complications due primarily to chronic middle ear effusion or previously undetected sensorineural deficits.

Research indicates that the greatest screening benefit is the detection of hearing loss resulting from sensorineural deficits or recurrent otitis media between birth and 3 years as this is the time in which speech and language skills develop (Bhattacharya et al., 1986; Wilcox et al., 1986). It is believed that early treatment of

hearing loss may permit the development of normal language and psychosocial skills and thus most experts recommend screening infants beginning at birth (Bhattacharya et al., 1984; Parving, 1985; Riko et al., 1985; Brooks, 1986; Prager et al., 1987). Woolf (1990), states that it is reasonable to assume, on the basis of existing data, that early correction of hearing impairment before 3 years of age is of some clinical value especially for children with signs of marked hearing impairment.

As previously noted, hearing screening in preschool and school-age children detects a larger proportion of conductive hearing losses due to serous otitis media with middle ear effusion. The major justification for detecting middle ear disease is to prevent chronic damage to the middle ear with associated hearing loss and difficulties in language development and learning (Hall, 1989). However, there exists a paucity of reliable studies measuring such medical and educational risks. Profound hearing loss clearly affects language development and learning. Research is less clear as to whether the mild, transient hearing loss associated with middle ear effusion has any effect on language or learning. Lyon and Lyon (1982) report that while many hearing losses are transient and remedial, if undetected and untreated they may have long term implications. Maw (1987), reports that disorders of the

middle ear may ultimately lead to established hearing loss. Teele et al. in a 1984 controlled study, reported language delay at 3 years of age in children documented to have had frequent middle ear effusions. A controlled study by Feldman et al.(1980) addressed the effect of preschool screening for vision and hearing. This study concluded that kindergarten children who received audiometric screening had the same prevalence of hearing disorders 6 to 12 months after the testing as children without the screening. One must be cautious, however, in interpreting the results of this study as it was designed to look at the rate of problems detected in a screened group versus a group who had not been screened rather than to examine the impact of defects on school performance. Most hearing deficits detected at this age are self-limiting episodes of acute otitis media with effusion that spontaneously resolve within 6 to 8 weeks (Cross, 1985; Brooks, 1986; Bellman, 1986). Given that the critical period of language development has passed by this age, these episodes appear to have little impact on educational performance and research indicates that detection of such cases is more likely to generate parental anxiety and visits to the paediatrician (Feldman et al., 1980; Cross, 1985).

In a 1990 background article entitled "Screening for Hearing Impairment" prepared for the Canadian and U.S.

Preventive Health Task Forces, Dr. S.H. Wooly stated:

"Screening for hearing impairment should be performed on all high-risk neonates. High-risk children not tested at birth should be screened before age 3. There is insufficient evidence to recommend for or against hearing screening of asymptomatic children beyond age 3. Abnormal test results in preschoolers and school children would be confirmed by repeat testing at appropriate intervals, and all confirmed cases identified through screening should be referred for ongoing audiological assessment, selection of hearing aids, family counselling, psychoeducational management and periodic medical evaluation" p. 345.

#### Behavioral/Emotional Screening

Problems of child development, behavior, school progress and their associated difficulties have been estimated to affect from 15% to 30% of young children and consume large amounts of health, education and social services in their treatment and remediation (Nader et al., 1982; Green 1983; Boyle et al., 1985). These problems, which frequently impact on the long-term well-being of children and their families, are often difficult to treat once established and thus screening, early identification and prevention have been important goals of community health and education services (DeWild, 1981; Cadman et al., 1984). Krajicek (1983), reported that 70% of children identified as having a significant emotional or behavioral disability at age 3 or 4 years would be disturbed five years later. Many

authorities estimate that 20% of school-age children are severely behaviorially or emotionally disordered, while another 7-10% have problems severe enough to warrant attention. Lichtenstein and Ireton (1984), have developed a list of behaviors that are suggestive of social-emotional problems at the preschool level. Such behaviors include frequent temper tantrums, excessively high activity levels, passivity, withdrawal from interpersonal contact, extreme aggressiveness or disobedience, bizarre verbalizations, excessive worrying or crying and persistent sad affect. These behaviors, while displayed by all young children at one time or another, become cause for concern when observed too frequently or, according to Bower's (1981) formulation of emotional disturbance, "when observed to a marked degree over a period of time" (p.115). As these judgements are subjective, however, they may be difficult for professionals to agree upon.

There is no consensus regarding the best way to assess behavioral/emotional health. In an Ontario public health study conducted by Cadman et al. in 1983, a preschool health history consisting of behavioral or neurodevelopmental problems in combination with a consideration of sociodemographic factors was found to provide the most useful and accurate information for identifying those children most at risk for future school problems. Mitchell



(1985) in studying the prediction of school and behavior problems in children followed from birth to age eight, reported a limited ability to accurately detect behavioral problems with "a single cluster of variables" or at "a single point in time". He concluded:

".... certain children, such as those living with two stable and well-educated parents are at a fairly low risk for further problems - certainly below the rate of risk that would make screening economically feasible. ....  
(on the other hand), children in high risk situations ... probably require screening at repeated intervals through their lives". (p. 128)

#### Speech/Language Screening

The acquisition of language is often considered to be the most important intricate aspect of human development and has been identified as a necessary component for normal intellectual development and adequate school performance (Aram et al., 1980, 1984). Delays in speech and language have been identified as the most common symptom of developmental disability in childhood (Coplan, 1985) and the failure to identify such problems in the preschool years can result in emotional, social and academic consequences (Capule et al., 1987). As with other aspects of development, children exhibit a great deal of variability in their acquisition of speech and language skills. Normal patterns of development, sequencing of behaviours and age

ranges for the attainment of developmental milestones have been established and deviations in speech have been identified and categorized (Drumwright, 1984). Using this knowledge, researchers and clinicians have developed a variety of instruments to assess general speech and language development and select aspects of speech and language function.

As direct assessment of a child's communication skills is highly dependent upon the child's cooperation, it is easily influenced by such factors as the child's mood, state of health and comfort with the examiner. For these reasons most screening instruments rely, at least partially, on parent reports as a source of data (Kilmon, Barber and Chapman, 1991). Speech and language development is also dependent upon other aspects of development (fine motor, auditory, cognitive, psychological, social and cultural) and as such, developmental language and learning disorders/delays may be marked by the presence of age appropriate skills and knowledge acquisition. Research indicates that because developmental language delays are not observable behaviours, specific screening of speech and language development is required in addition to a generalized developmental screening tool (Liber Gott et al., 1986).

Developmental Screening

Developmental appraisal is an integral part of the health assessment of all children (Waley and Wong, 1991). The basic premise underlying paediatric developmental screening, as with all screening, is that the earlier a dysfunction or defect can be identified, the better will be the outcome. Because problems of child development and behaviour are hard to treat once established, prediction of risk, prevention and early treatment are important goals for those dealing with young children (Cadman et al., 1987, 1988; Brook, 1992).

Despite strong support for the concept of developmental screening, there is no consensus as to how it can best be performed. Current professional practice reflects a variety of opinions on the subject (Dworkin, 1992). Recent recommendations of British and North American paediatric organizations, reported by Dworkin (1989) demonstrate that neither group advocates for the routine administration of screening tests for developmental monitoring of children. Both organizations agree that "developmental monitoring should be performed by the process of surveillance". Such surveillance emphasizes eliciting parents' opinions and concerns, obtaining a relevant developmental history and performing skilled, longitudinal observations of the

children. The two organizations support selective use of developmental screening tests as valuable aids in contributing to the acquisition of knowledge, focusing on the child's developmental status, reinforcing suspicions of delay and encouraging parents to raise concerns and ask questions.

Severe and permanent developmental problems are usually detected by means other than screening and thus developmental screening is most concerned with subtle impairments of development that might otherwise elude early detection (Frankenburg, 1983). These more subtle delays have significant morbidity in terms of their impact on childrens' school and family functioning. Most estimates of their prevalence range between 15-30% (Nader et al., 1981; Green, 1983; Boyle et al., 1985; Cadman et al., 1987) suggesting a prevalence sufficient to justify a "systematic approach to early identification" (Dworkin, 1989).

There are widely accepted criteria by which both specific conditions are judged appropriate for screening and specific tests are deemed appropriate for use in screening programs. However, neither the types of developmental delays for which screening is performed, nor the screening tests themselves fulfilled all standard criteria for acceptance (Dworkin, 1989; Meisels, 1989). It is doubtful whether the perfect developmental screening test can ever be

devised (Dworkin, 1989; Meisels and Wasik, 1990). Skepticism is growing regarding the reliability and validity of routinely administered developmental screening tests, including the Denver Developmental Screening Test (DDST) - the most widely used screening test (Cadman et al., 1987, 1988). Meisels and Wasik (1990), state that "if development is affected by subsequent environmental interactions, and if screening can capture only a momentary snapshot of this developmental process, it is not surprising that many errors occur"(p.63). It is argued that it is for these reasons that decisions regarding referral for developmental assessment should not be based on the results of a single screening test, but rather the screening test should be but one strategy whereby the health professional performs skilled observations of the child (Dworkin, 1989; Bellman, 1991; Waley and Wong, 1991; Dworkin, 1992).

Despite the popularity of public health developmental screening, there have been few attempts to rigorously evaluate it in an actual community setting. Cadman et al. (1987), reported on a controlled trial of a public health and education prekindergarten screening program in Ontario. Children received either the Denver Developmental Screening Test (DDST) with a community health intervention program for those children screening positive; the DDST with no intervention for those children screening positive; or no

screening test. The intervention program consisted of referral to the child's physician for assessment, a review conference between the child's teacher and the school health nurse, parent counselling and monitoring the child in school by the school health nurse. After three years of school attendance there were no differences found (using individual academic achievement, cognitive and development tests) between the children who screened positive and received the intervention and those children who screened positive and did not receive the intervention. Parents' reports revealed no differences between the groups in children's mental, social and behavioral well-being. However, parents of intervention program children had more worry about their child's school progress, suggesting a potentially harmful labelling effect.

Studies such as this cast doubt on the effectiveness of mass developmental screening. Meisels and Wasik (1990) suggest that what may be called for is a "multifactorial approach to screening, combined with a carefully devised periodicity schedule". It is being strongly advocated, given limited resources, that those children at highest risk of developmental delay be identified and efforts targeted at ongoing assessment/screening and intervention with these children and their families (Parkyn, 1986; Meisels and Wasik, 1990).

## Questionnaires/Survey

Public Health Nurse Questionnaire

## Description

The Public Health Nurse Questionnaire was mailed to all Public Health Nurse I's (PHNI'S) in the St. John's and District Health Unit who conduct Preschool Health Check clinics on a regular basis and were available to complete the questionnaire during the Study period(n=32). Table 1 shows that the overall return rate for this group was 78%.

TABLE 1

Return Rate by Nursing District for  
Public Health Nurse Questionnaire

| <u>Nursing District</u> | <u># Mailed</u> | <u># Returned</u> | <u>Return Rate - %</u> |
|-------------------------|-----------------|-------------------|------------------------|
| East                    | 12              | 9                 | 75                     |
| West                    | 12              | 8                 | 67                     |
| Rural                   | 8               | 8                 | 100                    |
| TOTAL                   | 32              | 25                | 78%                    |

The questionnaire consisted of 11 questions with the majority providing an opportunity for further comment. Specific issues examined included: the structure components, the assessment procedure and the referral and follow-up process involved in the Preschool Health Check Program; nurse's satisfaction with the program; program likes and dislikes, as well as suggestions for improvement. A final question provided an opportunity for additional comments.

## Results

The first series of questions pertained to nurse satisfaction with structure issues surrounding the delivery of the Preschool Health Check Program - clinic space, equipment, resources, availability of clerical support and education. Satisfaction was rated on a 4 point Likert Scale with 1 = Quite dissatisfied; 2 = Indifferent or mildly dissatisfied; 3 = Mostly satisfied; 4 = Very satisfied. Results are presented with their means bracketed. Overall, nurses reported being mostly satisfied (3.12) with the clinic space available. Isolated instances of dissatisfaction were noted regarding the following: clinics held in church basements which were dusty and dirty; clinics conducted in large rooms where 2 clinic set-ups were in the



one area separated only by a screen, resulting in lack of privacy and increased noise levels; and lack of client parking for some clinics. In relation to equipment, nurses reported being very satisfied (3.6). The only areas of dissatisfaction noted pertained to the storage of equipment (i.e. inconsistent storage practices resulting in increased length of time for a nurse to locate equipment at a clinic for set-up). Nurses also reported being very satisfied (3.6) with the resources available for the Preschool Health Check Program. However, individual nurses did express frustration with the lack of specific guidelines and protocols for behavioral assessment and with the amount of duplication involved in documentation. Availability of clerical support was reported to be mostly satisfactory (3.4) by nurses. The issue of education received an overall rating of 2.7 indicating indifference/mild dissatisfaction. Nurses specifically noted their dissatisfaction with the lack of continuing education. Comments suggested a need for periodic review of the specific screening components and a need for presentation of new material regarding preschool screening issues.

In reviewing the assessment procedure involved in the Preschool Health Check Program, nurses were asked to indicate whether they were satisfied or dissatisfied with a list of issues and to provide comments (Table 2). Sixty

percent of respondents (n=19) indicated they were dissatisfied with the speech component of the screening and of this number, 50% noted that the present screening tool was not effective in identifying children with speech problems, while 60% suggested that revisions were needed to the speech screening section to decrease the duplication and repetition with the speech language component of the Denver II. Fifty-two percent of respondents (n=17) expressed dissatisfaction with the behavior screening component and the majority of this group, eleven, cited lack of a screening tool, guidelines and referral protocols as their major concerns. Forty-eight percent of respondents (n=15) indicated that they were dissatisfied with the time allocated for the initial assessment, with all agreeing that more time was needed to complete the screening in its present structure (including health screening components, anticipatory guidance, immunization, referral and documentation). The suggested additional time required varied from 15 - 45 minutes. Forty percent of nurses (n=13) expressed dissatisfaction with the length of the screening. Half of the respondents felt that the child was too tired at the end of one hour to increase the screening time and instead suggested the need to streamline the screening, while the other half of the respondents felt that in order to complete the program additional time would be required.

TABLE 2

**Public Health Nurse Satisfaction Level with  
Assessment Components of the Preschool Health Check Program**

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| ASSESSMENT COMPONENT                  | SATISFACTION LEVEL<br><u>Frequency</u> |
|---------------------------------------|--|
| Appointments                          | 29                                     |
| Cancellations/no shows/did not attend | 26                                     |
| Time allotted for initial assessment  | 17                                     |
| Time allotted for retests             | 29                                     |
| Length of screening                   | 19                                     |
| Documentation                         | 21                                     |
| History                               | 28                                     |
| Immunizations                         | 28                                     |
| Behaviour                             | 16                                     |
| Nutrition                             | 28                                     |
| Growth                                | 32                                     |
| Vision                                | 31                                     |
| Hearing                               | 32                                     |
| Speech                                | 13                                     |
| Development                           | 27                                     |
| Physical                              | 24                                     |
| Dental                                | 31                                     |
| Anticipatory Guidance                 | 23                                     |

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The next question pertained to other areas of preschool assessment that respondents felt were necessary and could be done by nurses. Eighty percent (n=26) responded to this question with eleven indicating that there were additional areas of assessment needed including behavioral assessment (6), additional anticipatory guidance (3), and mental health (2).

In reviewing specific issues relating to the referral process, nurses identified several areas of concern. Seventy-two percent of respondents (n=23) indicated that the length of time to get a referral appointment was problematic and specifically cited a long wait for the Child Development Clinic (8) and speech therapy at the Janeway (7). Fourteen respondents expressed concern regarding the assessment of children who have had previous health assessments conducted by other professionals; seven of those responding indicated that communication of the results of previous assessments was problematic in that knowledge of previous assessments was not known prior to the preschool assessment and/or results of such assessments were not received even when requested; four nurses noted that this practice resulted in duplication of services. Nineteen respondents expressed concern regarding the receipt of referral reports from referring agencies. Specific concerns related to reports being slow (9) - Speech, Child Development Program and Ophthalmology/Optomety; reports seldom received (6), and

reports containing incomplete information (4). Fifty percent of respondents (n=16) identified follow-up by parents as a concern, with thirteen citing parental noncompliance in keeping appointments or calling with follow-up information as being particularly problematic. Nurses noted that a great deal of their time is spent in follow-up with parents and requested guidelines to assist in clarifying their role in this regard.

Also in relation to referral issues, nurses were asked to identify the health professional to whom they would like direct access for referring preschool children. Forty-eight percent of nurses (n=13) responded to this question with the majority (n=9) identifying paediatricians and three identifying other medical specialists such as ENT (if child had previously been seen by this specialist).

When asked to rate their overall satisfaction with the program, 64% of nurses (n=20) indicated they were mostly satisfied. Areas of the program which nurses liked included: program goals, objectives and purpose; screening format and the various screening components (excluding speech); opportunity to meet parents and discuss concerns regarding their child; and the ability to refer to appropriate agencies. Twenty-three percent of nurses (n=7) expressed their dislike of the speech language screening component and noted that the Fluharty Screening Tool was not

effective as children may pass the screening but still manifest a speech problem. As well, nurses felt that the speech screening was repetitious in light of the language screening components contained in the Denver II. Twenty percent of nurses (n=6) noted that there was inadequate time allotted for the initial screening and another 20% noted an unnecessary duplication with documentation and inconsistencies in recording. Eleven percent of nurses (n=4) reported that the screening time was too long and felt that children often became tired and uncooperative toward the end of the screening period. Other issues identified included lowering the screening age to less than 4 years to allow more time for intervention (2) and permit direct referrals from Preschool Health Check to pediatricians (2).

Eighty percent of nurses (n=24) provided suggestions on ways that the program could be improved and these suggestions were supported by their responses to previous questions. Six respondents suggested revising the speech language screening; 5 advocated that parents, through completion of a questionnaire, should determine the type of information they would like to have discussed; 4 felt the length of screening should be decreased and that this could be facilitated through minimizing the screening components to vision, hearing, development and immunization; and three suggested decreasing the amount of documentation required.

The final question provided an opportunity for respondents to supply additional comments. Forty percent of nurses (n=13) answered this question providing an overview of responses which were previously identified throughout the questionnaire. Four respondents noted that while the program needed revisions and modifications, overall it was effective; three noted that the scheduling and rescheduling of appointments for no shows, cancellations and rechecks was time consuming; and three cautioned that discontinuing the program or minimizing the screening to targeted populations only, would serve to increase the amount of time the nurse would need to spend in the school conducting screening, referring children and tracking immunization records.

#### Referring Agency Questionnaire

##### Description

A total of 38 questionnaires were mailed to a sample comprising health professionals from those agencies to whom Public Health Nurses refer preschool children from the Preschool Health Check Program. The overall return rate for this group was 76% (n=29).

The major purposes of this questionnaire were:

1. to determine the relevance, currency,

comprehensiveness, reliability and validity of present screening methods; and

2. to determine the quality and appropriateness of the referral process.

The questionnaire consisted of a total of 5 questions requesting information on the respondents' professional affiliation, usual methods of receiving referrals from the Preschool Health Check Program, comments regarding the specific assessment methods used in the Preschool Health Check relative to the respondent's area of expertise, comments regarding the referral process resulting from the Preschool Health Check Program and additional general comments.

## Results

Table 3 provides a breakdown of the various affiliations surveyed and their specific return rates. Seventy-two percent of respondents (n=21) indicated they received direct referrals from the Preschool Health Check. Those respondents who indicated they primarily received indirect referrals, (n=6), included school-based speech language pathologists and occupational therapists. Each referring agency was requested to comment regarding the specific assessment methods used to screen preschool



children in their particular area of specialization. Table 4 outlines the screening component and corresponding assessment method employed in the Preschool Health Check.

Twenty-eight percent of respondents (n=8), primarily ophthalmologists and optometrists provided comments regarding assessing visual acuity through Sheridan-

TABLE 3

## Return Rate by Affiliation For Referring Agency Questionnaire

| AFFILIATION                  | SAMPLE SIZE | # RETURNED | RETURN RATE - % |
|------------------------------|-------------|------------|-----------------|
| Ophthalmologists             | 2           | 1          | 50              |
| Optometrists                 | 7           | 6          | 86              |
| Speech Language Pathologists | 8           | 7          | 88              |
| Audiologists                 | 3           | 3          | 100             |
| Nutritionist                 | 1           | 1          | 100             |
| Child Development Program    | 4           | 2          | 50              |
| Thomas Anderson Centre       | 1           | 1          | 100             |
| Occupational Therapists      | 2           | 2          | 100             |
| Family Doctors               | 10          | 6          | 60              |
| TOTAL                        | 38          | 29         | 76              |

Gardner Screening. The majority, (n=7), indicated that this screening method was reasonably reliable overall, however,

one noted that while this may be so, its validity was greatest in detecting myopia and it had a low validity for detecting hyperopia, astigmatism and refractive errors. One also noted that it was good at detecting qualitative differences between the eyes and was capable of providing few or no false positives.

A total of 31% of respondents (n=9) provided comments regarding assessing strabismus in the preschool child. The corneal light reflex screening method was noted as a good screen by six respondents, but two of the respondents cautioned that this screening method was very dependent upon the skill of the examiner and the cooperation of the child. The cover test was reported to be a good, accurate, adequate and valid screening test by seven respondents. Again, caution was noted in that the screening test was said to be very dependent upon the examiner's skill and the child's cooperation. One respondent (optometrist) reported having never seen referrals containing an indication that this screening method had been used. Six respondents reported that the cover - uncover test was an adequate and reliable screening tool for strabismus. Again, two reported that it was dependent upon the skill of the examiner and the cooperation of the child; and one (optometrist) reported having never seen a referral containing information that this screening method had been used.

TABLE 4

**Preschool Health Check Summary Components And  
Corresponding Assessment Methods**

| COMPONENT            | ASSESSMENT METHOD  |
|----------------------|--|
| VISION               |  |
| . Visual Acuity      | . Sheridan - Gardiner Test   |
| . Strabismus         | . Corneal Light Reflex   |
|                      | . Cover test   |
|                      | . Cover - uncover test   |
| HEARING              | . Pure tone audiometry (25db at 500, 1000, 2000 and 4000 Hz; if any failures retest at 30db) |
| SPEECH and LANGUAGE  | . Fluaharty Speech and Language Screening Tool   |
|                      | . identification and articulation  |
|                      | . comprehension  |
|                      | . repetition   |
| DEVELOPMENT          | . DDST - R   |
|                      | . DDST   |
| BEHAVIORAL/EMOTIONAL | . Focus on behavioral problems through discussions with parent(s).                           |
|                      | . Behavioral Check List may be used  |
| NUTRITION/GROWTH     | . Nutrition Questionnaire  |
|                      | . Weight-for-height, mid arm circumference   |
| DENTAL               | . inspect teeth  |
|                      | . inquire re: dental visit   |

Pure tone audiometric screening used to assess the hearing ability of preschool children received comments from 24% of

respondents (n=7), audiologists and speech language pathologists. Overall, four respondents reported it to be an appropriate and reliable screening method while three expressed the need to modify the screening procedure now used to ensure that screening levels are no greater than 20db. Two respondents noted the need for regular calibration of portable audiometers and one respondent suggested that Public Health Nurses should receive periodic inservice education regarding conducting audiometric screening and the impact of hearing loss on children.

The speech language component of the Preschool Health Check Program received comments from 31% of respondents (n=9), speech language pathologists. While five reported that the tool appeared to be a good screening method, all noted that it was quite dated and should be replaced. The remaining four were not familiar with the tool and therefore could not comment.

The area of developmental screening using the DDST and the DDST-R received comments from 32% of respondents (n=9), child development, occupational therapy, mental health professional and perinatal program. Five noted that as a screening tool it provided good baseline data upon which further assessment could be made. Two respondents expressed concern that its predictive value had not been established and as such questioned its use as a screening tool, and two

respondents felt it lacked in areas of sensory and perceptual screening.

Behavioral screening of preschool children using the Behavioral Checklist received comments from 14% of respondents (n = 2). Comments suggested that while the checklist appeared to be a good screening method, the observations of the child's behaviour by the Public Health Nurse were invaluable. One respondent did not provide specific comments due to not being familiar with the screening tool

Seven percent (n = 2) responded to the nutrition screening component. Respondents agreed that the nutrition questionnaire, the weight for height, and the mid arm circumference were reliable and accurate screening methods. The nutritionist noted that slight revisions were needed in the nutrition questionnaire and this is presently under review by the Department of Health, Health Promotion Division.

Three percent (n = 1) of respondents commented on the dental screening and reported no problems.

The next question pertained to the referral process resulting from the Preschool Health Check Program. Respondents were asked to comment on the quality, appropriateness and completeness of the referrals they have received. Ninety-seven percent of respondents (n=28)

provided comments to this question with twenty reporting that the referrals they have received have been of good quality (adequate, accurate, appropriate and complete) and several respondents also noted that comments containing the Public Health Nurse's subjective impression of the child have been invaluable. Five physicians reported that the referrals they received were of poor quality (incomplete information and often verbal not written). These respondents noted the need for better communication with the family physician and provided the following suggestions: the family doctor be sent a written notice regarding initiation of a referral; a copy of the completed Preschool Health Check (even when normal) be sent to the family doctor; and the results of further assessment be sent to family doctor. The remaining three respondents felt that overall, while the referral process was a good one, there were specific improvements needed in relation to identification of children with learning disabilities and sensory-integration and perceptual problems.

The final question provided an opportunity for respondents to supply additional comments. Fifty-two percent of respondents (n=15) provided comments on a variety of issues relating to preschool screening in general, specific screening components and the Preschool Health Check Program. Nine respondents provided overall supportive

comments for the program - "The current program should continue as we find it a valuable process" (audiologist); "Very good program and quite effective" (optometrist); "I have always been very supportive of the Preschool Health Check Program. I feel it is an important adjunct to the idea of preventative medicine. The Program screens components which I myself cannot or do not do" (family doctor). Three respondents suggested that the age for screening should be less than four years to allow more time for intervention before starting school - "Children are sometimes not identified far enough in advance, and as a result only identification of the problem is done with little time for remediation prior to school entrance"; "A program which screened and referred at a slightly earlier age would be extremely beneficial". Two optometrists expressed specific concern regarding vision screening (i.e. nurses referring to ophthalmologist rather than optometrist; parent's perception that preschool health check vision screening replaces full eye examination by an eye doctor).

#### School Personnel Questionnaire

##### Description

The School Personnel Questionnaire was mailed to a sample of 58 education professionals representing both urban

and rural schools and major school boards within the boundaries of the St. John's and District Health Unit (Table 5). The overall return rate for the School Personnel Questionnaire was 62% (n=36). Table 6 provides a breakdown of the return rate by specific school personnel.

The questionnaire consisted of 14 questions designed to elicit responses regarding the respondents' perception of the Preschool Health Check Program, the need for additional screening areas, satisfaction with communication methods and channels for sharing screening results and program strengths and weaknesses. One question specifically pertained to the recommendations of the Royal Commission on Education "Our Children Our Future" regarding the development of a provincial prevention program and protocols on early childhood development and the implications of these recommendations for health programming.

## Results

Seventy-eight percent of respondents (n=28) indicated they were familiar with the Preschool Health Check Program. Of this group, half (n=14) felt that overall the program provided a good, comprehensive screening and five reported that information gleaned from the screening was useful in curriculum planning, determining school readiness and in



assisting with the planning and placement of special needs

TABLE 5

## Sampling For School Personnel Questionnaire

| SCHOOL<br>PERSONNEL         | URBAN          |               | RURAL          |               | TOTAL          |               |
|-----------------------------|----------------|---------------|----------------|---------------|----------------|---------------|
|                             | Sample<br>Size | #<br>Returned | Sample<br>Size | #<br>Returned | Sample<br>Size | #<br>Returned |
| Principal                   | 6              | 5             | 3              | 2             | 9              | 7             |
| Guidance<br>Counselor       | 4              | 1             | 2              | 2             | 6              | 3             |
| Kindergarten<br>Teacher     | 11             | 6             | 6              | 3             | 17             | 9             |
| Special Ed<br>Teacher       | 6              | 4             | 3              | 1             | 9              | 5             |
| Educational<br>Psychologist | 5              | 4             | 1              | 1             | 6              | 5             |
| Itinerant<br>Teacher        | --             | --            | --             | --            | 2              | 2             |
| School Board<br>Coordinator | --             | --            | --             | --            | 9              | 5             |
| TOTAL                       | 32             | 20            | 15             | 9             | 58             | 36            |

students. Six respondents expressed the need for greater communication between public health and the schools in relation to the sharing of information and two suggested that the program be broadened to include the screening of

additional areas of development and academic readiness screening.

TABLE 6

## Return Rate By Affiliation For School Personnel Questionnaire

| AFFILIATION               | SAMPLE SIZE | # RETURNED | RETURN RATE - % |
|---------------------------|-------------|------------|-----------------|
| School Principal          | 9           | 7          | 78              |
| Guidance Counsellor       | 6           | 3          | 50              |
| Kindergarten Teacher      | 17          | 9          | 53              |
| Special Education Teacher | 9           | 5          | 56              |
| Educational Psychologist  | 6           | 5          | 83              |
| Itinerant Teacher         | 2           | 2          | 100             |
| School Board Coordinators | 9           | 5          | 56              |
| TOTAL                     | 58          | 36         | 62              |

Respondents were asked a series of questions regarding the communication of results from the Preschool Health Check Program. Eighteen respondents indicated results were communicated directly to them - primarily kindergarten teachers (6) and principals (5); three indicated results were not communicated to them; and one indicated that sometimes they were aware of the screening results. Respondents were then asked how and by whom results were communicated to them. Of those responding (n=28), the majority, nineteen, indicated results were communicated

through face-to-face interviews with the Public Health Nurse. Other methods included telephone contact (5) and written summary (4). School Board Coordinators were reported to communicate results 10% of the time (primarily to Guidance Counsellors and Educational Psychologists) and the Child Health Coordinator communicated results 5% of the time (urban areas only). Ten respondents reported they were satisfied with these methods of communication, while twelve did not respond. Six respondents provided comments to substantiate their views: three indicated that numerous children are not reached by this screening program, and two suggested that present communication methods were satisfactory if the purpose of the screening was to identify children at risk or those with special needs.

The timing of the reporting of results was then reviewed in terms of the school year. Fifty-eight percent of individuals (n=20) responded to these questions. Of those responding, nine indicated that they received results of screening once the child started school (primarily kindergarten teachers and school principals); five indicated that the reporting of results is inconsistent with no particular time for reporting; and the remainder indicated either January (2), April (2) or June (1) of the previous school year. Seven respondents indicated that the timing of reporting was satisfactory, four were not satisfied and nine

did not respond. Six respondents provided comments regarding the timing of reporting; four noted that advance collaborative planning was required for successful school entry and thus the earlier the results could be communicated to schools the better; and two noted the need and importance of communicating the results of preschool screening to the school.

School personnel were asked if information from the Preschool Health Check Program assisted them. Fifty-eight percent (n=21) responded to this question with twenty indicating "yes". Comments demonstrated that the information from the screening was used by school personnel in a variety of ways: in conjunction with school assessments (6); as baseline information (5); and assisting in determining program and placement needs as well as identifying special needs students (5).

Seven respondents indicated that other screening components could be included in the Preschool Health Check Program. These additional screening components included: early literacy and numeracy skills which could be screened by Public Health Nurses using standardized testing procedures (12); screening of behavioral and emotional needs (12); and readiness skills (1). Two respondents pointed to the need for a team approach in reviewing and interpreting the results of the screening and suggested that the team

include a Public Health Nurse, an Educational Psychologist and a Speech Language Pathologist.

Respondents were next asked to identify program strengths (Table 7). Fifty-three percent (n=19) responded to this question and identified a variety of program strengths including program goals (3), the early identification of special needs children, children with physical deficits and those with potential problems (3).

TABLE 7

Frequency of Preschool Health Check Program Strengths  
As Identified By School Personnel

| PROGRAM STRENGTHS   | FREQUENCY |
|---|-----------|
| Program goals - health promotion, health protection and problem prevention      | 3         |
| Early identification of special needs, physical deficits and potential problems | 3         |
| Provides information which is useful as a baseline for further assessment       | 3         |
| Screening Components  | 3         |
| Assessment format is broad based  | 2         |
| Determines school readiness   | 2         |
| Provides an early contact with parents  | 2         |

Fifty-three percent of respondents (n=19) identified weaknesses with the Preschool Health Check Program. Six indicated the lack of communication between Public Health Nurses and school personnel as a major concern in that screening results on all children were not routinely

communicated and information was not always shared. Four identified the age of the child at the time of screening as being a weakness and felt that offering the health check after four years of age resulted in insufficient time for effective intervention programs to be initiated before school entry. Table 8 provides a list of weaknesses as identified by school personnel.

TABLE 8

**Frequency of Preschool Health Check Program Weaknesses as Identified by School Personnel**

| PROGRAM WEAKNESSES   | FREQUENCY |
|--|-----------|
| Lack of communication of screening results   | 6         |
| Age of child (often too old for effective intervention before school entry)  | 4         |
| Specific screening components do not identify important information regarding child's activity level, attention span, speech level | 3         |
| Program does not reach all children and often the children missed are the ones who would benefit from such a program               | 2         |
| Length of screening too long   | 2         |
| No early intervention program in place   | 2         |
| Lack of follow-up  | 2         |
| Singles out extreme cases only   | 1         |
| Parents perceive program to be a measure of intelligence   | 1         |

School personnel were asked for their comments on the recommendations made by the Royal Commission on Education "Our Children Our Future" regarding the need to develop a professional prevention program and protocols on early childhood development. The Royal Commission specifically

recommended that the purpose of such an initiative include the development of appropriate assessment procedures for 3 year old children to identify those children not progressing with age appropriate skills. Furthermore, the Commission also recommended that School Boards coordinate and encourage prevention programs to link children to the school system at an earlier age. Seventy-two percent (n=26) responded to this question with eighteen agreeing with the Royal Commission's recommendations. Nine noted that implementation of such recommendations would be contingent upon the allocation of additional financial and human resources as well as procedural changes at the school level. Over half of the respondents, fourteen, indicated a need to develop preschool programs to assist at-risk children.

The final question posed to school personnel provided an opportunity for additional comments. Fifty percent of respondents (n=18) completed this question with seven expressing their satisfaction of the Preschool Health Check Program and noted its value for preschool children. Five expressed support for coordinated early intervention programs targeting the preschool population, and five stressed the need for a stronger and more formalized partnership between preschool, school, home and the various community agencies and government departments. As one respondent stated "Children are coming to school with

increasingly complex problems - by using a proactive, integrated approach, particularly at the preschool level, we stand a chance of minimizing some of these problems and of making school a positive experience for all children".

### Key Informant Questionnaire

#### Description

The Key Informant Questionnaire was mailed to a small convenience sample (n=9) of individuals working in areas related to child development and intervention. The overall rate of return for this group was 78% (n=7). The questionnaire consisted of 7 questions designed to determine respondents' views of the Preschool Health Check Program, other screening components they felt should be included, as well as program strengths, weaknesses and ways to improve the program.

#### Results

One hundred percent of respondents (n=7) reported that they were familiar with the Preschool Health Check Program. Five indicated that the screening was useful in assisting to



identify major health and development conditions which may require specialized attention prior to school entry. Two respondents indicated that the screening was too rigid and not extensive enough to recognize major problems requiring remediation and intervention prior to school entry and that occasionally the screening was inappropriate for certain children (i.e. those with special needs).

Four respondents indicated that additional areas of screening should be included, while three were satisfied with the level of screening presently offered. Areas of additional screening included movement dysfunction in assessing children for gross motor, fine motor and overall coordination, and screening for learning disabilities and attention deficit disorder by a psychologist. One respondent suggested that the implications of the child's noted deficits should be clearly outlined and communicated, e.g. implication of visual deficits on performance, special considerations regarding oral motor function/dysfunction and methods of food intake.

Program strengths were identified by all respondents (n=7) and these included early identification and intervention prior to school entry (3); screening program conducted by Public Health Nurses (2); and screening as a strong assessment of general health (2) ( Table 9).

Respondents identified specific areas of weakness with

the program including the age of screening, which one respondent felt should be less than 4 years of age (3 years 9 months to 4 years) to allow sufficient time for effective intervention programs prior to school entry. One respondent noted that the results of a one-hour screening tend to be very dependent upon the cooperation of the child at the time of screening and thus cautioned against reading too much into such a basic screen. Two respondents identified areas of weakness pertaining to the screening of children known to

TABLE 9

**Frequency of Preschool Health Check Program  
Strengths as Identified by Key Informants**

| PROGRAM STRENGTHS                                      | FREQUENCY |
|--|-----------|
| Early identification and intervention                  | 3         |
| Screening conducted by public health nurses            | 2         |
| Screening provides a good assessment of general health | 2         |
| Mass screening of all preschool children               | 1         |
| Communication of results to school personnel           | 1         |
| Use of standardized screening tests                    | 1         |

have special needs and felt that the Public Health Nurse lacked both experience in assessing children with special needs and knowledge of the appropriate health professional who could best conduct a detailed assessment. Both respondents also indicated that the present screening program was too general to identify major problems and the screening tests and test materials were not easily adapted for use with special needs children.

Table 10 presents a listing of identified program weaknesses and their frequencies. Five respondents provided suggestions on ways to improve the program. These suggestions included expanding the list of health professionals and agencies to whom nurses can refer preschool children for further assessment (2); decreasing the age of screening to between 3 years 9 months and 4 years (1); and providing opportunities to increase the nurse's practical experiences in assessing children with special needs (1).

The final question provided an opportunity for individuals to supply additional comments. Four respondents replied to this question, with two respondents commenting on the role that the Public Health Nurse plays in the early identification of children with special needs and those at risk - "The person most often reported to make an early identification and referral is the Public Health Nurse.

TABLE 10

**Frequency of Preschool Health Check Program  
Weaknesses as Identified by Key Informants**

| PROGRAM WEAKNESSES   | FREQUENCY |
|--|-----------|
| Age of child should be younger (3 years<br>nine months to 4 years)   | 1         |
| Lack of experience in assessing children with<br>special needs   | 1         |
| Lack of knowledge regarding the appropriate<br>health professional to whom to refer special<br>needs children requiring further assessment | 1         |
| Screening tests too general to identify many<br>major problems   | 1         |
| Screening tests and materials not easily<br>adapted for use with special needs children  | 1         |
| Too much emphasis placed on a 1-hour<br>screening test   | 1         |
| Implications of deficit not noted  | 1         |
| No assessment of learning disabilities   | 1         |
| Perceived by parents as a measure of child's<br>intelligence   | 1         |

This resource is already available to us and should be supported"; "I feel strongly that the screening should be done by Public Health Nurses - it is certainly not something that can be done without a very good knowledge of child development and general health, safety and nutrition. Since the Public Health Nurse is already in the community and well qualified to conduct this program, I see no reason to change this. Nurses do not always recognize the value of their

knowledge and the value of their input". One respondent noted that not all nurses are well informed regarding the type and range of support services available and one respondent indicated that the screening program is a good beginning but requires expansion and improvement.

### Parent Questionnaire

#### Description

The Parent Questionnaire was administered by the researcher via telephone interviews to a total of 70 parents of children born in 1987 who attended the Preschool Health Check prior to starting kindergarten in 1992 and who were in Grade I at the time of the Study. This convenience sample included a rural/urban mix of 20/50. The questionnaire was comprised of two parts - Part I contained demographic information and Part II consisted of specific questions relating to the Preschool Health Check Program.

#### Results

Responses to the demographic data questions indicated a fairly even sampling of male and female children (32) and (38) respectively with 73% of the children (n=51) attending

school in an urban area. The majority of parents (n=53) either heard about the Preschool Health Check Program from family and friends (27), or through the Public Health Nurse or a contact person from the public health office when called with an appointment (26).

Ninety-four percent of parents (n=66) reported being satisfied with the physical environment of the clinic they attended, with only 4 parents indicating dissatisfaction. The dissatisfied parents all attended the same clinic, all complained of a damp, musty odour, and all noted that with construction presently underway for a new clinic in the area, these problems would soon be alleviated. Ninety-nine percent of parents (n=69) reported that the clinic they attended was quiet and private, that the nurse took time to make their child feel comfortable before beginning the assessment, and that time was allowed for the parent to ask questions. Sixty-one parents stated that the results of the screening tests were discussed with them when their child's assessment was complete.

Table 11 illustrates the frequency of identified needs and subsequent referrals from the Preschool Health Check Program. Approximately 29% of all children screened (n=20) were identified as requiring further assessment for vision concerns, 8 for speech language, 5 for hearing, 3 for development, and 2 for behaviour.

The majority of children referred for further assessment (n=53) were seen within 3 months, however, twenty-seven of those referred for speech language concerns were not seen until 3 - 6 months. Two of the total number

TABLE 11

**Frequency of Needs/Concerns Identified and Subsequently Referred by Public Health Nurses During Preschool Health Check**

| NEEDS/CONCERNS  | IDENTIFIED | REFERRED  |
|-----------------|------------|-----------|
|                 | Frequency  | Frequency |
| Vision          | 20         | 17        |
| Hearing         | 5          | 5         |
| Speech/Language | 8          | 5         |
| Development     | 3          | 2         |
| Behaviour       | 2          | 0         |
| Nutrition       | 4          | 0         |
| Dental          | 6          | 4         |
| Other           | 1          | 1         |

of children referred were in kindergarten before they received follow-up. Twenty-five parents reported that they were aware that their child had the specific problem identified before attending the health check - this problem

was identified by the parent in seventeen of the cases, by the family doctor or paediatrician in four cases and by the perinatal program or child development program in four cases. Eight children were identified as having problems once they started school - four children had behaviour problems, two children had vision problems and two children had hearing problems. Parents did not feel these problems should have been identified before the child started school.

For those children with identified needs (n=35), twelve had been or currently were being followed by an eye specialist, six by a school specialist, and five by their family doctor. Table 12 gives a complete listing of professionals involved in these children's care.

TABLE 12

Professionals Previously or Currently Involved  
In Child's Care as Identified by Parents

| PROFESSIONAL                     | FREQUENCY |
|----------------------------------|-----------|
| Eye Specialist                   | 12        |
| School Specialist                | 6         |
| Family Doctor                    | 5         |
| Dentist                          | 4         |
| Hearing Specialist               | 3         |
| Speech/Language Pathologist      | 2         |
| Communication Development Clinic | 2         |
| Specialist at Janeway            | 1         |
| Public Health Nurse              | 1         |



Parents were asked to identify what they liked about the Preschool Health Check Program. Sixty-nine parents responded, with over half (n=36) stating that they liked the fact that the Program screened children for problems which they as parents may not have recognized in their child; eleven commented on the nurses' personality and the clinic atmosphere which both assisted in making their child feel comfortable; and ten reported that the Program determined their child's readiness for school. Table 13 depicts a list of program likes identified by parents.

TABLE 13

**Frequency of Preschool Health Check Program Likes  
as Identified by Parents During Telephone Interview**

| PROGRAM LIKES                                 | FREQUENCY |
|---|-----------|
| Identification of problems                    | 36        |
| Friendly nurse, comfortable clinic atmosphere | 11        |
| School readiness                              | 10        |
| Early identification and intervention         | 6         |
| Good program, convenient and effective        | 5         |
| Provided suggestions and information          | 1         |

Ninety-four percent of parents (n=66) responded to the question asking what they disliked about the program, with

forty-three stating that there was nothing they disliked. Of the remaining respondents (n = 23), eight felt that the screening should be conducted at a younger age; five reported that one hour was too long a period of time and there was too much included in this time; while four felt that the screening was not detailed enough. Table 14 indicates a complete list of program dislikes identified by parents.

Parents were then asked how the program could be improved. Ninety-four percent of parents responded (n=66) with forty-seven stating that no improvements were needed as

TABLE 14

**Frequency of Preschool Health Check Program Dislikes  
as Identified by Parents During Telephone Interview**

| PROGRAM DISLIKES  | FREQUENCY |
|---|-----------|
| Nothing   | 43        |
| Child should be younger   | 8         |
| Time too long and too much to do                                  | 5         |
| Screening not detailed enough                                     | 4         |
| Mass screening unnecessary - target children to be screened       | 2         |
| Duplication of services by screening those already being followed | 2         |
| Unaware of program's goals/purposes                               | 1         |
| Should not include immunization                                   | 1         |

they were pleased with the program. The remaining nineteen respondents provided a variety of suggestions for

improvement including: offer the screening at an earlier age; decrease the amount of screening; conduct a physical exam only; and decrease duplication of services by identifying those children already in receipt of follow-up.

The final question requested that parents rate their overall satisfaction with the Program. One hundred percent of parents (n=70) responded to this question with forty-nine stating they were very satisfied with the Program, twenty mostly satisfied and one indifferent or mildly dissatisfied.

### Inter-Provincial Survey

#### Description

An Inter-provincial Survey was developed for administration to Provincial and Territorial Departments of Health (Community Health Division) to ascertain their practice regarding preschool health screening.

#### Results

Three Provinces responded to the questionnaire - New Brunswick, Saskatchewan and British Columbia (16 Health Units). All three Provinces reported that they conduct an assessment of preschool children and have done so for many years. British Columbia was the only Province reported to

conduct targeted screening based upon individual assessment of risk in the newborn and early preschool period (based upon Parkyn's model). This screening is conducted at varied intervals - 8-10 months and 18-24 months. New Brunswick conducts mass screening at 3-5 years and Saskatchewan at 4 years. Public Health Nurses conduct the screening in all three Provinces and they have received specialized training for the specific screening components. Both New Brunswick and Saskatchewan conduct a wide range of screening components while British Columbia screens development of at-risk infants and preschool children and conducts vision and hearing screening at school entry. Only Saskatchewan actively conducts immunization at the time of the preschool assessment.

Referral patterns indicate a mix of referral agents employed both within the Health Unit and outside the Health Unit. All three Provinces conduct an evaluation with their vision screening program. Program monitoring is conducted by a variety of methods. In New Brunswick a provincial computer program tracks all referrals and outcomes and reports are generated both for individual regions and for the province. In Saskatchewan and British Columbia monitoring is through the reporting of number screened, referral and their outcomes.

Clinic Attendance Statistics

Attendance statistics for Preschool Health Check Clinics conducted during 1990 - 1991 are presented in Table 15. From these statistics one can determine the following: the mean of children attending each clinic (2.5); the number of new children who attended the clinics (2151); the number of children who attended the clinic for retest (1122 - 34% of total attendance); the immunization rate by

TABLE 15

**Preschool Health Check Clinic Attendance Statistics for  
St. John's and District Health Unit, 1990 - 1991**

|                    |      |      |
|--------------------|------|------|
| # of clinics       | 1317 |      |
| # attended (total) | 3273 |      |
| # retest           | 1122 |      |
| # immunization     | 1854 |      |
| # Total referrals  | 683  |      |
|                    | #    | %    |
| - vision           | 276  | 40.4 |
| - hearing          | 66   | 9.7  |
| - speech           | 98   | 14.3 |
| - dental           | 70   | 10.2 |
| - nutrition        | 7    | 1.0  |
| - family doctor    | 75   | 11.0 |
| - other            | 91   | 13.3 |

Public Health Nurses for children attending the preschool clinics (86%).

For each child attending the clinic, there are three outcomes of the screening process:

- (1) no physical problems or developmental delays are apparent and the child passes the screening (66%);
- (2) screening results are incomplete or questionable and rescreening is indicated (34%);
- (3) screening results suggest possible delays or problems and further assessment is recommended (21%).

Nursing human resources expended in conducting these clinics is estimated at 3797 hours which translates into 2.09 full time equivalents. Based upon these figures, the cost of staffing these clinic is calculated to be approximately \$83,600.00. As a cost benefit analysis is beyond the scope of this study, further analysis of program costs in terms of materials resources, facilities (rent and utilities), supplies, equipment, etc. is not provided.

#### Outcomes of Screening and Follow-Up

Documentation of outcomes of screening and follow-up data for the Preschool Health Check Program were requested to be kept by all Public Health Nurses conducting preschool

screening. Such data were intended to be used to assist in evaluating the effectiveness of the various screening components of the program. Table 16 provides a comparison of outcome of screening and follow-up data for the St. John's and District Health Unit, 1990 - 1991. As previously noted, Public Health Nurses expressed frustration and concern regarding their inability to collect complete follow-up data, specifically on the outcomes of referrals for further

TABLE 16

**Preschool Health Check Outcome of Screening and  
Follow-Up Data for St. John's and District Health Unit  
1990 - 1991**

| Components Referred | % Referred | % Referrals Confirmed | % Referrals Results Pending | % Positive in Screened Population |
|---------------------|------------|-----------------------|-----------------------------|-----------------------------------|
| Vision              | 8.1        | 33                    | 38                          | 2.70                              |
| Hearing             | 1.8        | 50                    | 10                          | 0.90                              |
| Speech/<br>Language | 2.8        | 51                    | 42                          | 1.40                              |
| Dental              | 0.5        | 13                    | 87                          | 0.06                              |
| Behaviour           | 0.6        | 40                    | 60                          | 0.24                              |
| Nutrition           | 0.2        | 71                    | 29                          | 0.15                              |
| Development         | 1.3        | 49                    | 39                          | 0.61                              |

assessment. Review of the data collected in the St. John's and District Health Unit substantiates their concerns, in that during the 1990 - 1991 year approximately 28% of children referred for further assessment (in all screening areas) were lost to follow-up or the results were pending and not recorded. Analysis indicates poor follow-up data for dental referrals (89% lost to follow-up or pending), behavioral/emotional referrals (55% lost to follow-up or pending) development referrals (49% lost to follow-up or pending), and speech language referrals (41% lost to follow-up or pending). While such situations may occur, as in the case of long waiting lists for further assessment, outcome data are not updated once the child has been seen as the child often is in the school system and outcome of preschool screening is already forwarded on for tabulation. Thus, these cases remain pending and accurate data collection is not achieved. If accurate data collection is the goal of keeping such records, then modification to the present system is required to ensure that the large number of pending cases are appropriately documented once seen. Ultimately, such program statistics should be computerized.

Table 16 also provides an indication of the incidence of various problems in the screened population. Again the accuracy of this information is questionable given the high proportion of cases pending or lost to follow-up.



**CHAPTER 5****SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter presents a summary of the Study. The researcher has drawn numerous conclusions based upon a review of the literature in combination with analysis of the questionnaires, clinic statistics, outcome and follow-up data as well as telephone consultation and focus group interviews. These conclusions relate to preschool screening in general, the various screening components contained within the Preschool Health Check Program and specific issues involved in implementation of the Program. Recommendations for action follow the discussion of conclusions for each topic. A list of recommendations for further research concludes this Study.

**Preschool Screening**

As children develop at different rates along a number of dimensions, their status changes over time and thus observations made and decisions reached based upon a one-time assessment may not accurately reflect the child's overall ability. It is primarily for this reason that child development and health professionals advocate screening of

preschool children as one stage of a comprehensive, coordinated child health screening program. One such program currently available in British Columbia, developed by Parkyn(1986), begins in the immediate postnatal period with a child and family risk assessment. Risk factors assessed are those in which follow-up by a Public Health Nurse is "meaningful in terms of possible intervention and services available". Parkyn categorizes children at risk according to the following: those who have an identified congenital or acquired handicap or health challenge; infants and preschool children in families with interaction and/or social problems; children at risk of developmental delay in the social, motor or language area(s). The Parkyn multifactorial risk assessment instrument is currently being used by the Community Health Liaison Nurses of the St. John's and District Health Unit located in the obstetrical area at the Grace General Hospital. This instrument is used to assess families for priority postnatal follow-up by the district public health nurse. The next step toward full implementation of the risk appraisal process involves use of the assessment tool as a guide to identification, intervention and follow-up of at risk children and families through to the preschool period and beyond. Planning is currently under way to implement a pilot of the Parkyn assessment and follow-up process in Eastern and Western

### Public Health Units.

By providing a comprehensive ongoing risk appraisal program as developed by Parkyn and discussed above, many of the problems and areas of dissatisfaction regarding preschool screening identified by respondents would be alleviated. These concerns include: too much emphasis on a one-time assessment; need to screen children at an earlier age to allow more time for identification, intervention and possible remediation prior to school entry; lack of follow-up; concern regarding children missed who are most in need of early identification and intervention.

#### Recommendation:

1. That the Department of Health institute a more coordinated and comprehensive public health nursing assessment and intervention program for infants and preschool children at risk and provide effective follow up.
2. That the preschool assessment be targeted towards those children identified to be at risk during the infant and early preschool period.

#### Age of Preschool Screening

A guiding principle of early identification is that it must be early enough to permit intervention. The younger the child and the further the child is from entering school, the lower the validity of screening measures for predicting

school performance (Lichtenstein and Ireton, 1984). There must be sufficient consistency over time between a child's functioning in early childhood and what is significant for the child in later years in order for early identification to make sense. Otherwise, it could be assumed that early developmental problems will be outgrown and require no special attention.

Research has demonstrated that among children showing significant delay at an early age, those children of low socio-economic status are far more likely than children of high socio-economic status to have later educational or developmental problems (Rubin and Balou, 1979). These patterns are not strong enough, however, to be confidently predicted. Studies also demonstrate that infants whose development is clearly delayed can be predicted to have later cognitive delays with greater certainty than infants in general (McCall et al., 1972).

A different picture exists for the later preschool years, as children begin to display skills, abilities and behaviours. By age 4 or 5 years, it is reported that developmental gains in verbal fluency, fine motor and perceptual skills, and symbolic/representational thinking enable assessment measures to correlate substantially with subsequent school age measures of cognitive ability and educational program (Bloom, 1964; Robb, Bernardoni and

Johnson, 1972; Fowlor and Cross, 1986). Longitudinal research on the stability of mental ability bears this out. Bloom (1964) summarized the results obtained in major longitudinal studies and discovered remarkable consistency in the degree to which later functioning could be predicted from scores obtained at different age levels. He found that mental tests administered prior to age 3 correlated to a low degree (below .40) with intelligence measured at age 10. Correlations rose sharply during the age period from 3 to 5, reaching figures near .70 and continued to increase gradually thereafter. Interestingly, the greatest variability among these studies occurred at ages 3 and 4. The finding that assessment measures gradually become more valid and stable as the child gets older and as the prediction interval becomes shorter leaves one with a complex decision regarding when to screen. Waiting until predictions are highly accurate may leave no time in which to intervene.

Given this review of the literature on age of screening combined with screening ages for the various components previously presented and suggestions provided by respondents, it seems the most appropriate age to screen would be approximately 3 1/2 years and certainly not later than 4 years.

**Recommendation:**

3. That preschool screening be conducted on children approximately aged 3 years 6 months and not later than 4 years.

Vision Screening

General satisfaction was expressed by respondents regarding the present vision screening methods used in the assessment of visual acuity and strabismus and the referral process resulting from vision screening. Research supports the effectiveness of preschool vision screening including screening for amblyopia. Screening for strabismus satisfies the basic principles necessary for effective screening.

**Recommendation:**

4. Continue with current universal preschool vision screening.

Perceptual and Integrative Processing Screening

Screening for problems with perceptual and integrative processing were identified as necessary components to be added to a preschool screening program by various respondents. As information received by the senses must be conveyed and integrated, without distortion, through the

complex neurological systems before being available for higher-order mental operations such as reading and writing, it is obvious that the identification of problems in these areas would greatly assist affected children in coping with various learning situations. Perceptual and integrative processes are difficult to clearly distinguish from other developmental areas because they are essential elements of, or prerequisites for, various developmental functions and thus, it is necessary to involve a variety of health professionals in developing specific questions to screen for these problems.

**Recommendation:**

5. Consult with other health professionals regarding the development of specific questions to screen children identified at risk for problems involving perceptual and integrative processing.

Hearing Screening

Review of the literature yielded numerous studies identifying hearing impairment as a contributing and possible casual factor of developmental delay. The American Preventive Services Task Force reported that there was insufficient beneficial evidence to recommend for or against hearing screening for asymptomatic children beyond the age

of 3. The present screening method involving pure tone audiometric screening at 25db was reported by Audiologists to be ineffective in detecting those children with minimal hearing loss and slight sensorineural loss as a 25dB threshold loss would cause a school child to experience some learning problems. For these reasons, the Chief Audiologist of the Janeway Child Health Centre recommended the following screening procedure in response to the questionnaire: screen 500 hz, 1000 hz, 2000 hz, 4000 hz at 20 db; screen 500 hz at 25 db if not heard at 20 db. 500 hz is the most susceptible frequency to noise infringement. An otoscopic examination of the ear should be conducted prior to audiometric screening. If signs of an occlusion or an infection are apparent, a referral should be made to the family doctor.

**Recommendation:**

6. Provide hearing screening to at-risk children according to recommendations for pure tone audiometric screening (screen at 20 db) as provided by Audiology Department, Janeway Child Health Centre.
7. Conduct an otoscopic examination of the ear prior to audiometric screening.



Behavioral/Emotional Screening

When the Preschool Health Check Program began in 1988, the Behavioral Checklist was not universally implemented as a screening tool; however, if the Public Health Nurse or parent had a concern regarding behavior, the Checklist could be used to further explore, discuss or refer. (This Checklist had been previously piloted and was recommended for adoption as a universal screening tool by the Mental Health Division of the Department of Health. The Medical Officers of Health at the time did not support the universal implementation of this tool as a core component of the Preschool Health Check Program). According to results from the questionnaires, usage of the Behavioral Checklist by Public Health Nurses is low, and both School Personnel and Referring Agencies, while reporting lack of familiarity with the tool, reiterated the need for a screening instrument to identify those children with behavioral/emotional problems so that intervention could be initiated prior to school entry. The Behavioral Checklist is used by Public Health Nurses in Central, Western and Northern Regions based on nursing assessment. Educational Psychologists and Guidance Counsellors reported the necessity of identifying those children at risk due to early environmental problems, especially in relation to bonding issues, ie. children in

foster care, children who were premature babies and children who were severely ill as infants; as it was noted that these children frequently exhibit behavioral and emotional problems in the school setting. Review of the literature indicated that there was no consensus regarding the best way to assess behavioral/emotional health and that the ability to accurately detect behaviour problems with a single cluster of variables or a single point in time is limited. The literature did note, however, that a multifactorial risk assessment was the most effective predictor of behavior problems, and children identified at risk should be screened at repeated intervals.

Given that school personnel, referring agencies and key informants reported a critical need to screen preschool children for behavioral/emotional problems and given that the literature supports such screening for at risk children, efforts should be made to explore the further utilization and evaluation of the Behavior Checklist.

**Recommendation:**

- 8. That the Behavioral Checklist be evaluated to determine its ability to examine child behavioral and emotional problems in school and to screen for behavioral and emotional problems.**

Speech Language Screening

As reported by Casper (1985) speech disorders are often amenable to total resolution and almost always to a significant degree of improvement especially if diagnosed and treated early. Wilcox and Semel (1986) report that speech language screening with preschool aged children needs to be focused on functional communication, that is targeted to those skills which facilitate appropriate social interaction and interpersonal communication. Liebergott et al (1986) stated that developmental language learning delays/disorders are not readily observable behaviors and, as such may be masked in the presence of age appropriate social skills and pre-academic concept knowledge. Specific screening of speech language development is required in addition to a generalized developmental screening tool.

Public Health Nurses expressed dissatisfaction with the Fluharty Speech and Language Screening Tool currently in use. They reported that it was not effective in identifying children with speech problems and duplication existed between it and the language components of the recently implemented Denver II developmental screening tool. Speech Language Pathologists reported that the Fluharty tool was quite dated and required replacement. As direct assessment of a child's communication skills is highly dependent upon

the child's cooperation, the literature notes that most screening tools rely at least partially, on reports from parents.

Questionnaire results from Public Health Nurses and parents reported waiting times in excess of three months for appointments with Speech Language Pathology at the Janeway. Such lengthy waiting translates into delays in intervention often resulting in a lack of time for remediation prior to school entry.

**Recommendation:**

9. Review existing tools for speech language assessment.
10. Develop appropriate strategies for speech language assessment.
11. Consult with Speech Language Pathology Department at the Janeway Child Health Centre to discuss issues regarding the referral process for children who screen positive for speech/language concerns.

Developmental Screening

It should be noted prior to the fall of 1993, the DDST and DDST-R were used to screen development and as such the questionnaires developed for the evaluation reflected this practice. In September, 1993, Public Health Nurses began

using the Denver II as the developmental screening method for preschool children and thus Public Health Nurses based their responses on this new screening instrument and reported a high level of satisfaction. Referring agencies such as the Child Development Program reported that the DDST and the DDST-R yielded good objective data upon which further assessments could be based. Other referring agencies expressed concern that the validity of these tools (DDST, DDST-R) as predictive screening instruments had not been established, that they lacked sensory and perceptual screening components and that a parent questionnaire was needed to ascertain developmental history. Research casts doubt on the effectiveness of mass developmental screening and scepticism is growing regarding the reliability and validity of routinely administered developmental screening tests, including the DDST. The developmental screening method now being advocated involves identifying children at highest risk of developmental delay, ongoing assessment and intervention with those children and their families.

**Recommendation:**

- 12. Discontinue mass developmental screening and target those children at highest risk of developmental delay.**

Duplication of Services

Public Health Nurses expressed the need to be doing more immunizations and voiced their frustration over the duplication of services and resultant increase in health care costs associated with parents taking their child to the family doctor for immunization following attendance at the Preschool Health Check Clinic. Review of Preschool Health Check Statistics (1990-1991, 1991-1992) and Education Statistics (school year 1991-1992, 1992-1993) demonstrate that 81% of children attending kindergarten in 1991/92 received immunization by the Public Health Nurse; however, this number had decreased to approximately 73% of kindergarten students in 1992/93. Of note is the fact that 94% of kindergarten students in 1991/92 and 99% in 1992/93 attended the Preschool Health Check Program.

**Recommendation:**

13. The Department of Health review the current method of delivery of infant and child immunisation as this has implications for the conduct and cost of the preschool assessment program.

Public Health Nurse and parent respondents expressed concern regarding the duplication of services involved in screening children who have already been assessed by other

health professionals and have received or currently are receiving treatment. One possible explanation for this situation is that, due to the lack of communication of results from previous assessments, public health nurses are not always aware that the child has been previously assessed. A second reason for this occurrence may result from the fact that not all nurses realize they should not administer screening tests to children who are currently being followed by another professional or agency for the condition which the specific screening is intended to detect.

**Recommendation:**

14. Ensure that all nurses conducting preschool screening are aware that screening is not conducted on children who are being followed for the condition the screening is intended to detect.

Coordination and Follow-Up

The shift towards identification and tracking of at risk infants and preschool children necessitates effective coordination, consultation, collaboration and follow-up to ensure success. To this end, a full time nurse coordinator position responsible exclusively for matters of infant and preschool health is required. In addition to the duties of

the present half-time child health coordinator, the full-time coordinator would be responsible for such areas as communication and interpretation of health reports with appropriate professionals, maintenance of a data base, development of a computerized system of tracking program outcome and follow-up data and continuing education related to child health issues for appropriate personnel.

**Recommendation:**

15. Create a full-time nursing position dedicated to the clinical coordination of infant and preschool health programs.

Public Health Nurses identified follow-up with parents as an area of concern, specifically in relation to parent noncompliance in keeping appointments and not calling back with requested information. This inaction results in a great deal of nursing time being spent tracking information. Nurses have requested that guidelines outlining their role in follow-up be developed to ensure consistency in tracking pertinent information, including outcome and follow-up data.

**Recommendation:**

16. Develop guidelines to assist public health nurses in the clarification and further development of their role in follow-up.

The risk assessment format proposed in this evaluation, developed by Parkyn, identifies those children at risk for



developmental delay, neglect or abuse, physical or emotional problems secondary to other handicaps, and children of families who have a potential for poor parent/child interaction. This process enables the public health nurse to refer more appropriately and in so doing, to optimize the use of and access to various services and resources as required. Central to this process is the need for ongoing consultation with appropriate school and school board personnel to communicate results of the preschool screening.

Several referring agencies and school personnel suggested that in order to increase communication, to provide better follow-up and to decrease the stress in families with identified problems, the results of preschool assessments be reviewed by a team of professionals.

**Recommendation:**

17. To develop a mechanism for ongoing meetings with the nurse and appropriate School Board and school personnel on a quarterly basis and prior to school entry to review results of the preschool screening.

Communication of Results

Family doctors expressed the need to be informed when their preschool clients are referred from the Preschool Health Check Program for further assessment and reported

that presently this is not often done. With implementation of the Preschool Health Check Program in 1988 each Health Unit developed forms to ensure communication with physicians regarding client referrals. Results from family physicians in the boundaries of St. John's and District Health Unit indicated that not all public health nurses are following this procedure and as such, physicians are not always aware that their preschool clients have been referred. The Parkyn risk assessment and follow-up process utilizes a letter to notify the family doctor when an infant or preschool client is being followed by the public health nurse.

Nursing Managers of the St. John's and District Health Unit are currently developing a "Referral for Further Assessment" form. This form will be in triplicate with one copy to be sent to the family doctor, one copy for the referring agency and one copy for the client's record. They plan to use this form in the Preschool Health Check Program.

School personnel reported the results from the Preschool Health Check to be quite useful, however they expressed concern regarding the need to develop a formal process to share screening results as present communication methods and reporting patterns are inconsistent. Staff from the St. John's School Boards noted that guidelines have been jointly developed, in collaboration with the Child Health Coordinator, outlining the procedure for notification of

children with special health needs. At present there are no formal communication methods or reporting mechanisms in place for at risk children.

**Recommendation:**

18. Collaborate and consult with School Boards to jointly establish guidelines for the notification of at risk children.

Perception of the Preschool Health Check Program

Many school personnel perceive the Preschool Health Check as a school readiness assessment to be used for curriculum planning and school placement, and not as a health screening program. The program purpose, goals and objectives need to be communicated to school personnel on three levels - School Board, School Administrators and Teachers. This communication should involve both the Child Health Coordinator and the Nurse responsible for each school to ensure that consistent information is conveyed to all.

**Recommendation:**

19. Child Health Coordinator and the Nurse jointly meet with appropriate school personnel (School Boards, School Administrators and Teachers) to discuss the purpose, goals and objectives of preschool screening.

Documentation

Public Health Nurses repeatedly expressed their frustration regarding issues relating to documentation, including the need to decrease the amount of documentation required and/or increase the time allotted for documentation, and the necessity of providing guidelines on the recommended documentation procedures to ensure consistency. It was also requested that the Preschool Health Check Assessment Form be revised to reflect modifications in screening procedures (ie. Denver II).

**Recommendation:**

20. Documentation procedures be reviewed with an aim to streamline requirements and revise forms as needed to ensure consistency.

Continuing Education

In response to the questionnaire, Public Health Nurses noted their dissatisfaction with the lack of continuing education pertaining to the Preschool Health Check Program. Comments suggested a need for periodic review of various aspects of the program such as screening components, documentation requirements, referral protocols, guidelines for follow-up and updates on new information pertaining to

preschool screening. Some referring agencies also commented on the importance of conducting periodic reviews of the screening components.

It must be noted, however, that Nursing Managers of the St. John's and District Unit have an ongoing mechanism in place through which Public Health Nurses identify their health education needs. Prior to this study, topics relating to preschool screening in general, and the Preschool Health Check Program specifically, had not been identified by nurses.

**Recommendation:**

- 21. Determine the ongoing educational needs of nurses in relation to preschool screening and provide the necessary education to meet those needs.**

Although not included for review in this Study, it is important to recognize that the assessment components of anticipatory guidance and addressing parent concerns are essential aspects of any preschool assessment. These components of well child care are strongly supported in the literature and should remain core to any revised Preschool Health Check Program.

It is recognized that some of the recommendations can be implemented more readily than others; it is also recognized that some aspects of the recommendations are

currently being addressed through other initiatives of the Department of Health and the Public Health Regions. However, before taking steps to implement changes in any of the program components, this report should be discussed with the other Public Health Regions.

**Recommendation:**

22. That a Provincial Working Group be established to discuss the recommendations of the report, plan to conduct a review of the Preschool Health Check Program in other regions and a strategy to address the recommendations that can be implemented in the short term.

**Recommendations for Further Research**

Further research might be done in the following areas:

1. Conduct a longitudinal study on the outcome measures of the specific screening interventions provided within the Preschool Health Check Program.
2. Determine the cost effectiveness of the Preschool Health Check Program.
3. Replicate this program evaluation of the Preschool Health Check Program in other health regions of the Province.

4. Compare outcomes of preschool children screened at various ages.
5. Evaluate the Behavioral Check List to determine its ability to screen for behavioral and emotional problems in the preschool population.

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**APPENDICES**

**APPENDIX A**

**Preschool Health Beliefs and Values**



PRESCHOOL HEALTH BELIEFS AND VALUES

ABOUT PRESCHOOLERS Preschool years are years of rapid change, increasing independence and vastly expanding skills and knowledge. These children:

- . continue to develop rapidly in physical, social, emotional, behavioural, and cognitive spheres
- . have an enormous capacity for learning
- . live in an ever-widening world where development is stimulated and where caregivers other than family become important
- . experience changes in the protection that characterizes infancy as it is gradually replaced by freedom to explore
- . are enthusiastic about their increasing autonomy, but are still not self-reliant
- . are impressionable, curious, and vulnerable to accidents, injuries, communicable disease, and neglect
- . are learning attitudes and habits that can last a lifetime

ABOUT THEIR PARENTS - Parents are the primary influence in shaping their child's development and have the primary responsibility for that child's well-being.

Parents:

- . are at various stages of their own development
- . have different levels of knowledge and skills about child-rearing
- . need and want to be prepared to deal effectively with both their own and their child's development
- . need reassurance and support in parenting
- . may need to more actively seek the information they want since health unit resources tend to be less numerous and less visible than those offered during the "new parent" year.

Caregivers and child care providers act as substitute parents in meeting the child's needs in the parent's absence. They:

- . need knowledge and skills to deal appropriately with pre-schoolers in their care
- . have needs that vary according to individual levels of education, knowledge, and experience

ABOUT HEALTH - The health of preschoolers is largely dependent on their parents or caregivers and is affected by many factors which include:

- . an expanding environment and increasing exposure to the outside world resulting in an increased susceptibility to communicable disease and injury
- . their investigative nature and increasing independence
- . their parents' attitudes and knowledge regarding health
- . their developing habits and attitudes toward their bodies themselves, health and health professionals
- . availability of health services including early identification and prompt intervention

ABOUT COMMUNITY HEALTH NURSING - Community health nursing with this age group:

- . continues the focus on family health established during the prenatal and infancy periods
- . recognizes the need for frequent contact to assess the health status and needs of preschool children
- . capitalizes on the preschooler's enthusiasm and ability for learning, to encourage healthy habits and lifestyles

**APPENDIX B**

**Public Health Nurse Questionnaire  
School Personnel Questionnaire  
Key Informant Questionnaire  
Referring Agencies Questionnaire  
Parent Questionnaire  
Interprovincial Survey  
Focus Group Interview Guidelines**

**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**PUBLIC HEALTH NURSE QUESTIONNAIRE**

1. DISTRICT                      \_\_\_\_\_ ST. JOHN'S EAST  
    \_\_\_\_\_ ST. JOHN'S WEST  
    \_\_\_\_\_ RURAL
2. Indicate your level of satisfaction regarding the following structure issues relating to the Preschool Health Check Program (1 = Quite dissatisfied; 2 = Indifferent or mildly dissatisfied; 3 = Mostly satisfied; 4 = Very satisfied).

|  | 1 | 2 | 3 | 4 | Comment if not satisfied |
|--|---|---|---|---|--------------------------|
| <b>2.1 Clinic Space</b><br>(a) location<br>(b) cleanliness of clinic<br>(c) size of clinic<br>(d) noise level<br>(e) privacy<br>(f) temperature<br>(g) access to telephone<br>(h) other - specify<br>_____ |   |   |   |   |                          |
| <b>2.2 Equipment</b><br>(a) availability<br>(b) maintenance<br>(c) storage<br>(d) other - specify<br>_____<br>_____  |   |   |   |   |                          |

|  | 1 | 2 | 3 | 4 | Comment if not satisfied |
|--|---|---|---|---|--------------------------|
| <b>2.3 Resources</b><br>(a) Preschool Health Check Manual<br>(b) other reference manuals<br>(c) forms<br>(d) literature<br>(e) other - specify<br>_____<br>_____ |   |   |   |   |                          |
| <b>2.4 Availability of clerical support</b>  |   |   |   |   |                          |
| <b>2.5 Education</b><br>(a) initial inservice/training<br>(b) continuing education<br>(c) other - specify<br>_____<br>_____                                      |   |   |   |   |                          |

Overall Comments: \_\_\_\_\_

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3. Indicate your satisfaction or dissatisfaction (Satisfaction = S; Dissatisfaction = D) with the following issues and assessment components of the Preschool Health Check Program and provide comments. Use back of page if you need more space.

| ISSUES                                | Satisfied(S)/<br>Dissatisfied(D) | COMMENTS |
|---------------------------------------|----------------------------------|----------|
| Appointments                          |                                  |          |
| Cancellations/no shows/did not attend |                                  |          |
| Time allotted for initial assessment  |                                  |          |
| Time allotted for retests             |                                  |          |
| Length of screening                   |                                  |          |
| Documentation                         |                                  |          |
| History                               |                                  |          |
| Immunization                          |                                  |          |
| Behaviour                             |                                  |          |
| Nutrition                             |                                  |          |
| Growth                                |                                  |          |
| Vision                                |                                  |          |
| Hearing                               |                                  |          |
| Speech                                |                                  |          |
| Development                           |                                  |          |
| Physical                              |                                  |          |
| Dental                                |                                  |          |
| Anticipatory guidance                 |                                  |          |

4. Are there other areas of preschool assessment that you feel are necessary and which nurses could do it if they were appropriately trained?

☐ Yes ☐ No

If "Yes", specify the assessment area(s) \_\_\_\_\_

5. Regarding the referral process, indicate if the following issues are of concern to you. If yes, explain.

- (a) assessment of children who have had previous health assessments by other professionals

☐ yes ☐ no

Explain: \_\_\_\_\_

- (b) length of time to get a referral appointment

☐ yes ☐ no

Explain: \_\_\_\_\_

- (c) receipt of referral reports from referring agency/person

☐ yes ☐ no

Explain (identify agency) : \_\_\_\_\_

- (d) follow up by parents

☐ yes ☐ no

Explain: \_\_\_\_\_

- (e) communication with school/daycare personnel

\_\_\_ yes                      \_\_\_ no

Explain: \_\_\_\_\_

\_\_\_\_\_

6. As a Public Health Nurse you make direct referrals from the Preschool Health Check Program to other health care professionals.

- (a) List those individuals to whom you make direct referrals.

\_\_\_\_\_

\_\_\_\_\_

- (b) Identify other health professionals to whom you would like to have direct access for referring preschool children.

\_\_\_\_\_

\_\_\_\_\_

7. Overall, how satisfied are you with the Preschool Health Check Program?

- \_\_\_      1.      Very satisfied
- \_\_\_      2.      Mostly satisfied
- \_\_\_      3.      Indifferent or mildly dissatisfied
- \_\_\_      4.      Quite dissatisfied



8. What do you like about the program?

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9. What do you dislike about the program?

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10. How could the program be improved?

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11. Additional Comments: \_\_\_\_\_  
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\_\_\_\_\_

**USE BACK OF PAGES IF YOU NEED MORE SPACE  
THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!**

Please return to: Ms. Moira O'Regan-Hogan  
Fax # 729-5824; Telephone # 729-3110

Please return on or before: October 4, 1993

Mailing address: Ms. Moira O'Regan-Hogan  
Research Assistant  
Department of Health  
Community Health Division  
P. O. Box 8700  
St. John's, NF  
A1B 4J6

# **PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**

## **SCHOOL PERSONNEL QUESTIONNAIRE**

1. Indicate your position. (choose one)

|  |   |
|--|---|
| <input type="checkbox"/> School Board: specify _____ | <input type="checkbox"/> Educational Psychologist |
| <input type="checkbox"/> School Principal            | <input type="checkbox"/> Educational Therapist    |
| <input type="checkbox"/> Kindergarten Teacher        | <input type="checkbox"/> Guidance Counsellor      |
| <input type="checkbox"/> Special Education Teacher   | <input type="checkbox"/> Other: specify _____     |
| <input type="checkbox"/> Intinerant Teacher          |   |

2. Are you familiar with the Preschool Health Check Program which is conducted by Public Health Nurses?

☐ Yes ☐ No

If "yes", go to Question 3.

If "no", go to Question 14.

3. Indicate your view of the Preschool Health Check Program in relation to education programs targeting preschool children:

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4. Are results from the Preschool Health Screening Program communicated to you?

☐ Yes ☐ No

If "Yes", go to Question 5

If "No", go to Question 10

5. How are these results communicated to you and by whom?

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6. Is this method satisfactory?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

Comment: \_\_\_\_\_

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7. In relation to school entry, when are these results communicated to you?

\_\_\_\_\_ when the child has started kindergarten

\_\_\_\_\_ June of the previous school year

\_\_\_\_\_ April of the previous school year

\_\_\_\_\_ January of the previous school year

\_\_\_\_\_ Other: Specify \_\_\_\_\_

8. Is this time frame satisfactory?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

Comment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Does information from the preschool screening assist you?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

If "Yes", explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Are there other components which you would like to see included in the Preschool Health Check Program?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

If "Yes", list additional assessment areas and identify the professional whom you feel could conduct this screening?

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11. In your opinion, what are the strengths of the Preschool Health Check Program?

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12. In your opinion, what are the weaknesses of this program?

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The Royal Commission on Education, "Our Children Our Future", acknowledged the need to develop a provincial prevention program and protocols on early childhood development. The Commission recommended that the purpose of such an initiative include the development of appropriate assessment procedures for children aged 3 years to identify those children not progressing with age appropriate skills. The Commission also recommended that school boards coordinate and encourage prevention programs to link children with the school system at an earlier age.

13. Based upon your experience with the present Preschool Health Check Program and your role in the Education System, please comment on these recommendations and their implications for health programming.

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14. Comments: \_\_\_\_\_  
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**USE BACK OF PAGES IF YOU NEED MORE SPACE**

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**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION  
KEY INFORMANT QUESTIONNAIRE**

1. Are you familiar with the Preschool Health Check Program which is conducted by Public Health Nurses?

\_\_\_\_ Yes      \_\_\_\_ No

If "yes", go to Question 2.

If "no", go to Question 7.

2. Indicate your view of the Preschool Health Check Program. \_\_\_\_\_

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3. Are there other area(s) of screening which you would like to see included in the Preschool Health Check Program?

\_\_\_\_ Yes      \_\_\_\_ No

If "yes", list the additional area(s) and identify the professional whom you feel could conduct this screening.

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4. In your opinion, what are the strengths of the Preschool Health Check Program?

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5. In your opinion, what are the weaknesses of this program?

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6. How could this program be improved?

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7. **Comments:** \_\_\_\_\_  
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\_\_\_\_\_

**USE BACK OF PAGES IF YOU NEED MORE SPACE**

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**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**REFERRING AGENCIES QUESTIONNAIRE**

1. Please indicate your affiliation:

|  |   |
|--|---|
| <input type="checkbox"/> audiology                                   | <input type="checkbox"/> occupational therapy   |
| <input type="checkbox"/> child development clinic<br>(specify _____) | <input type="checkbox"/> ophthalmology          |
| <input type="checkbox"/> early intervention/direct<br>home services  | <input type="checkbox"/> optometry              |
| <input type="checkbox"/> family doctor                               | <input type="checkbox"/> psychology             |
| <input type="checkbox"/> mental health professional                  | <input type="checkbox"/> speech/lang. pathology |
| <input type="checkbox"/> nutritionist                                | <input type="checkbox"/> other - specify _____  |

2. The Public Health Nurse makes referrals from the Preschool Health Check Program. These referrals can be either direct or indirect.

A **Direct referral** is one which is forwarded to you directly from the Public Health Nurse. For example, a preschool child fails the speech/language screening assessment and is referred directly to a speech language pathologist.

An **Indirect referral** is one which is forwarded to you from another health professional, based upon information collected by the Public Health Nurse. For example, the Public Health Nurse refers a child to the Child Development Clinic for assessment of gross motor skills and the child development clinic, following assessment, refers this child to an occupational therapist for further assessment.

Have the referrals you received been primarily ☐ Direct or ☐ Indirect?

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. The Preschool Health Check Program uses a variety of assessment methods in screening preschool children:

| COMPONENT   | ASSESSMENT METHOD   |
|---|---|
| <b>VISION</b> <ul style="list-style-type: none"> <li>Visual Acuity</li> <li>Strabismus</li> </ul> | <ul style="list-style-type: none"> <li>Sheridan - Gardiner Test</li> <li>Corneal Light Reflex</li> <li>Cover test</li> <li>Cover - uncover test</li> </ul>  |
| <b>HEARING</b>  | <ul style="list-style-type: none"> <li>Pure tone audiometry (25db at 500, 1000, 2000 and 4000 Hz; if any failures retest at 30 db)</li> </ul>   |
| <b>SPEECH and LANGUAGE</b>  | <ul style="list-style-type: none"> <li>Fluharty Speech and Language Screening Tool               <ul style="list-style-type: none"> <li>identification and articulation</li> <li>comprehension</li> <li>repetition</li> </ul> </li> </ul> |
| <b>DEVELOPMENT</b>  | <ul style="list-style-type: none"> <li>DDST-R</li> <li>DDST</li> </ul>  |
| <b>BEHAVIORAL/EMOTIONAL</b>   | <ul style="list-style-type: none"> <li>Focus on behavioral problems through discussions with parent(s).</li> <li>Behavioral Check List may be used.</li> </ul>  |
| <b>NUTRITION/GROWTH</b>   | <ul style="list-style-type: none"> <li>Nutrition Questionnaire</li> <li>weight - for -height, mid arm circumference</li> </ul>  |
| <b>DENTAL</b>   | <ul style="list-style-type: none"> <li>inspect teeth</li> <li>inquire re: dental visit</li> </ul>   |

3. Please comment on the specific assessment method(s) used in the Preschool Health Check Program related to your area of expertise. Include reference to the validity, reliability, relevance, currency and comprehensiveness of assessment tools used.

| Component | Assessment Method | Comments |
|-----------|-------------------|----------|
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |

4. Provide comments regarding the referral process resulting from the Preschool Health Check Program. Include reference to the quality, appropriateness and completeness of referrals.

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5. Additional Comments:

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**USE BACK OF PAGES IF YOU NEED MORE SPACE  
THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!**

Please return to: Ms. Moira O'Regan Hogan  
Fax #: 729-5824; Telephone: 729-3110

Please return on or before: October 15, 1993

Mailing address: Ms. Moira O'Regan Hogan  
Research Assistant  
Department of Health  
Community Health Division  
P. O. Box 8700  
St. John's, NF  
A1B 4J6

**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**REFERRING AGENCIES QUESTIONNAIRE**

1. Please indicate your affiliation:

|  |                             |
|--|-----------------------------|
| ____ audiology                                   | ____ occupational therapy   |
| ____ child development clinic<br>(specify _____) | ____ ophthalmology          |
| ____ early intervention/direct<br>home services  | ____ optometry              |
| ____ family doctor                               | ____ psychology             |
| ____ mental health professional                  | ____ speech/lang. pathology |
| ____ nutritionist                                | ____ other - specify _____  |

2. The Public Health Nurse makes referrals from the Preschool Health Check Program. These referrals can be either direct or indirect.

A **Direct referral** is one which is forwarded to you directly from the Public Health Nurse. For example, a preschool child fails the speech/language screening assessment and is referred directly to a speech language pathologist.

An **Indirect referral** is one which is forwarded to you from another health professional, based upon information collected by the Public Health Nurse. For example, the Public Health Nurse refers a child to the Child Development Clinic for assessment of gross motor skills and the child development clinic, following assessment, refers this child to an occupational therapist for further assessment.

Have the referrals you received been primarily \_\_\_\_ Direct or \_\_\_\_ Indirect?

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. The Preschool Health Check Program uses a variety of assessment methods in screening preschool children:

| COMPONENT   | ASSESSMENT METHOD   |
|---|---|
| <b>VISION</b> <ul style="list-style-type: none"> <li>. Visual Acuity</li> <li>. Strabismus</li> </ul> | <ul style="list-style-type: none"> <li>. Sheridan - Gardiner Test</li> <li>. Corneal Light Reflex</li> <li>. Cover test</li> <li>. Cover - uncover test</li> </ul>  |
| <b>HEARING</b>  | <ul style="list-style-type: none"> <li>. Pure tone audiometry (25db at 500, 1000, 2000 and 4000 Hz; if any failures retest at 30 db)</li> </ul>   |
| <b>SPEECH and LANGUAGE</b>  | <ul style="list-style-type: none"> <li>. Fluharty Speech and Language Screening Tool               <ul style="list-style-type: none"> <li>. identification and articulation</li> <li>. comprehension</li> <li>. repetition</li> </ul> </li> </ul> |
| <b>DEVELOPMENT</b>  | <ul style="list-style-type: none"> <li>. DDST-R</li> <li>. DDST</li> </ul>  |
| <b>BEHAVIORAL/EMOTIONAL</b>   | <ul style="list-style-type: none"> <li>. Focus on behavioral problems through discussions with parent(s).</li> <li>. Behavioral Check List may be used.</li> </ul>  |
| <b>NUTRITION/GROWTH</b>   | <ul style="list-style-type: none"> <li>. Nutrition Questionnaire</li> <li>. weight - for -height, mid arm circumference</li> </ul>  |
| <b>DENTAL</b>   | <ul style="list-style-type: none"> <li>. inspect teeth</li> <li>. inquire re: dental visit</li> </ul>   |



3. Please comment on the specific assessment method(s) used in the Preschool Health Check Program related to your area of expertise. Include reference to the validity, reliability, relevance, currency and comprehensiveness of assessment tools used.

| Component | Assessment Method | Comments |
|-----------|-------------------|----------|
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |
|           |                   |          |

4. Provide comments regarding the referral process resulting from the Preschool Health Check Program. Include reference to the quality, appropriateness and completeness of referrals.

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5. Additional Comments:

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**USE BACK OF PAGES IF YOU NEED MORE SPACE  
THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!**

Please return to: Ms. Moira O'Regan Hogan  
Fax #: 729-5824; Telephone: 729-3110

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Research Assistant  
Department of Health  
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P. O. Box 8700  
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A1B 4J6

**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**PARENT QUESTIONNAIRE/TELEPHONE SURVEY**

**PART I      Demographic Information**

- 1.1 Child's date of birth:      Yr. \_\_\_\_ Mo. \_\_\_\_ Day \_\_\_\_
- 1.2 Child's sex:      Male      Female
- 1.3 Area:      East/West      Rural

**PART II**

- 2.1 How did you first learn about the Preschool Health Check Program?
- \_\_\_\_\_
- 2.2 What clinic did you attend for the preschool health check? Specify clinic name/location \_\_\_\_\_
- 2.3 Were you satisfied with the physical environment of the clinic you attended for the Preschool Health Check?
- \_\_\_\_\_ Yes      \_\_\_\_\_ No
- If "No", briefly explain: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- 2.4 Was the clinic area quiet and private?
- \_\_\_\_\_ Yes      \_\_\_\_\_ No
- 2.5 Did the nurse take time to help your child feel comfortable before beginning the assessment?
- \_\_\_\_\_ Yes      \_\_\_\_\_ No

- 2.6 During the clinic visit was time allowed for you to ask questions or express concerns?
- \_\_\_\_\_ Yes      \_\_\_\_\_ No
- 2.7 Were the results of the screening tests discussed with you when your child's assessment was complete?
- \_\_\_\_\_ Yes      \_\_\_\_\_ No
- 2.8 Did the nurse identify any of the following needs/concerns with you about your child?

|                      | YES | NO | CAN'T<br>RECALL |
|----------------------|-----|----|-----------------|
| Vision               |     |    |                 |
| Hearing              |     |    |                 |
| Speech/Language      |     |    |                 |
| Development          |     |    |                 |
| Behaviour            |     |    |                 |
| Nutrition            |     |    |                 |
| Dental               |     |    |                 |
| Other: specify _____ |     |    |                 |
| _____                |     |    |                 |

If any "Yes", go to Question 2.9

If all "No", go to Question 2.13

- 2.9 Was your child referred to see someone else because of these needs/concerns?  
If "Yes", indicate how long your child had to wait to see this person/these persons

| COMPONENT            | REFERRED |    | WAITING TIME |          |         |              |
|----------------------|----------|----|--------------|----------|---------|--------------|
|                      | Yes      | No | <3 mos.      | 3-6 mos. | >6 mos. | Can't Recall |
| Vision               |          |    |              |          |         |              |
| Hearing              |          |    |              |          |         |              |
| Speech/language      |          |    |              |          |         |              |
| Development          |          |    |              |          |         |              |
| Behaviour            |          |    |              |          |         |              |
| Nutrition            |          |    |              |          |         |              |
| Dental               |          |    |              |          |         |              |
| Other _____<br>_____ |          |    |              |          |         |              |

If all "No", go to Question 2.11

- 2.10 Was your child in kindergarten before he/she received follow up?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

- 2.11 Were you aware that your child had these needs/concerns before attending the preschool screening clinic?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

If "Yes", go to Question 2.12

If "No", go to Question 2.14

- 2.12 Who identified this need/concern?

Specify \_\_\_\_\_

Go to Question 2.14

- 2.13 If there were no needs/concerns identified during the preschool assessment, were any of the following needs/concerns identified once your child started kindergarten?

|                               | YES | NO |
|-------------------------------|-----|----|
| Vision                        |     |    |
| Hearing                       |     |    |
| Speech/Language               |     |    |
| Development                   |     |    |
| Behaviour                     |     |    |
| Nutrition                     |     |    |
| Dental                        |     |    |
| Other: specify _____<br>_____ |     |    |

If any "Yes", go to Question 2.15

If any "No", go to Question 2.17

- 2.14 Aside from those needs/concerns identified by the Public Health Nurse during the preschool assessment, were any of the following needs/concerns identified once your child started kindergarten?

|                               | YES | NO |
|-------------------------------|-----|----|
| Vision                        |     |    |
| Hearing                       |     |    |
| Speech/Language               |     |    |
| Development                   |     |    |
| Behaviour                     |     |    |
| Nutrition                     |     |    |
| Dental                        |     |    |
| Other _____<br>_____<br>_____ |     |    |

If any "yes", go to Question 2.15.

If any "no", go to Question 2.16.

- 2.15 Do you feel these needs/concerns should have been identified before your child started kindergarten?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

Explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 2.16 What professionals have been or currently are involved in your child's care? (check all that apply)

\_\_\_\_\_ child development clinic

\_\_\_\_\_ nutritionist

\_\_\_\_\_ dentist

\_\_\_\_\_ occupational therapist

\_\_\_\_\_ direct home services

\_\_\_\_\_ physiotherapist

\_\_\_\_\_ eye specialist

\_\_\_\_\_ provincial perinatal program

\_\_\_\_\_ family doctor

\_\_\_\_\_ psychologist

\_\_\_\_\_ hearing specialist

\_\_\_\_\_ public health nurse

\_\_\_\_\_ school specialists

\_\_\_\_\_ social worker

\_\_\_\_\_ speech/language pathologist

\_\_\_\_\_ other, specify: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ none

- 2.17 What did you like about the preschool health check program?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2.18 What did you dislike about the preschool health check program?

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2.19 What ways could the program be improved?

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2.20 Overall, how satisfied are you with the service you received at the Preschool Health Check Program?

- \_\_\_\_\_ 1. Very satisfied
- \_\_\_\_\_ 2. Mostly satisfied
- \_\_\_\_\_ 3. Indifferent or mildly dissatisfied
- \_\_\_\_\_ 4. Quite dissatisfied



**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**INTERPROVINCIAL SURVEY**

1. Province \_\_\_\_\_
2. Does your province conduct an assessment program for preschool children?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If "Yes", How long has this program been in place? \_\_\_\_\_

If "No", go to Question 19.

3. Indicate the nature of this assessment program

\_\_\_\_\_ Mass screening \_\_\_\_\_ Targeted screening \_\_\_\_\_ Other

Briefly describe: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. At what age is this assessment conducted? \_\_\_\_\_
5. What is (are) the purpose(s) of this assessment?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. Do Public Health Nurses conduct this assessment in your province?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If "Yes", go to Question 7.

If "No", go to Question 8.

7. Do these nurses receive specialized preparation?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

If "Yes", explain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Go to Question 9.

8. Identify the specific group which conducts preschool health assessment in your province?

\_\_\_\_\_

9. Are there other agencies in your province conducting preschool health assessment programs?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

If "Yes", identify the group(s) \_\_\_\_\_

10. List the components of preschool health which are assessed during this program (eg. vision, hearing, development, speech/language)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



13. Do you provide immunization at the time of this assessment?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If "No", when and by whom is immunization provided?

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14. Have you conducted an evaluation of your preschool program or any of its components?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If "Yes", briefly describe the overall results of this evaluation.

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15. Provide a brief explanation of how your program is monitored. (eg. process of tracking follow-up and outcome data; methods used; resources available).

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16. List the strengths of your preschool assessment program.

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17. Identify weaknesses with your preschool assessment program.

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18. Do you plan to continue providing a preschool health assessment program?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

Comments: \_\_\_\_\_  
\_\_\_\_\_

19. Additional comments:

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20. Please indicate if you will be forwarding by mail additional information on preschool health assessment programs.

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

**USE BACK OF PAGES IF YOU NEED MORE SPACE  
THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!**

Please return to: Ms. Moira O'Regan-Hogan  
Fax #: (709) 729-5824; Telephone (709) 729-3110

Please return on or before: 

Mailing address: Ms. Moira O'Regan-Hogan  
Research Assistant  
Department of Health  
Community Health Division  
P.O. Box 8700  
St. John's, NF  
A1B 4J6

**PRESCHOOL HEALTH CHECK PROGRAM EVALUATION**  
**FOCUS GROUP INTERVIEW GUIDELINES**

Purposes: 1. To ensure that the analysis of data regarding interpreting and summarizing results is not conducted in isolation  
2. To contribute to the utility of the evaluation while assuring all who should be involved are.

Method: Stakeholders will be presented the preliminary results of the collected data along with other pertinent requirements. The group will meet for several hours to discuss their interpretations of the information collected and analyzed during the evaluation period. This method will serve to bring multiple perspectives to the interpretation task.

Procedure: Findings for the study will be systematically reviewed with each participant interpreting each finding and the researcher contributing her own interpretation. Permission will be requested for the discussions of the meeting to be tape recorded so that all interpretations and their reasons can be available to be applied to the final data analysis.

**APPENDIX C**

**Correspondence**





# Memorial

University of Newfoundland

Faculty of Education



February 7, 1995.


To: Dr. Frank Riggs, Associate Dean, Graduate Studies  
From: Dr. Walter C. Okshevsky, Chair, Ethics Review Committee  
Subject: Ms. M. O'Regan-Hogan's thesis proposal

---

The Committee has completed its initial consideration of Ms. O'Regan-Hogan's thesis proposal entitled "An evaluation of the preschool health check program" and wishes to convey to you and Ms. O'Regan-Hogan the following recommendations regarding requirements for approval of her proposal.

As the submitted instruments have already been used in the gathering of data for the Evaluation conducted by Ms. O'Regan-Hogan for the Department of Health, she is not required to submit these to the Committee for approval. Given present University and Faculty Guidelines, the Committee requires a copy of the Letter of Consent for Ms Joan Dawe, Assistant Deputy Minister, Community Health Division, in which the types and sources of data required for the purposes of Ms. O'Regan-Hogan's thesis research are clearly itemized. Further, the sections of her proposal dealing with methodology need to be revised/up-dated to indicate the present stage of her thesis work.

If I or any other member of the Committee may at this time be of further assistance to you, please do not hesitate to contact us.

  
Walter C. Okshevsky

Committee members: Drs. Singh, Sharpe, Seifert, Canning, Okshevsky

cc: Dr. Patricia Canning, Associate Dean, Research and Development

DATE: 1995 02 28

TO: Dr. Walter C. Okshevsky, Chair, Ethics Review Committee,  
Faculty of Education

FROM: George A. Hickman, Director of Human Resources

SUBJECT: **MS. MOIRA O'REGAN-HOGAN'S THESIS PROPOSAL**

---

In reference to your letter of February 7, 1995, to Dr. Frank Riggs, Associate Dean, Graduate Programs, please find attached copies of the following letters:

December 1, 1994 - Letter from Ms. Moira O'Regan-Hogan to Ms. Joan Dawe, Department of Health.

January 10, 1995 - Letter of permission from Ms. Joan Dawe to Ms. Moira O'Regan-Hogan. This is accompanied by a "Preservation of Confidentiality Statement."

During the development of the thesis text, sections of the proposal dealing with methodology will be revised as necessary.

On behalf of the Thesis Committee and Ms. O'Regan-Hogan, I would like to thank your Committee for their cooperation and assistance. We are confident that the thesis will now be completed during the next few months.

George A. Hickman

/km  
Attachment

cc: Dr. F. Riggs  
Dr. P. Canning  
✓ Ms. M. O'Regan-Hogan  
Dr. R. Kelleher  
Ms. L. Vivian-Book

Briarcliffe  
P. O. Box 100  
Bay Bulls, NF  
A0A 1C0  
December 1, 1994

Mrs. J. Dawe  
Assistant Deputy Minister  
Department of Health, and  
Chair, Provincial Quality Assurance Program  
P. O. Box 8700  
St. John's, NF  
A1B 4J6

Dear Mrs. Dawe:

As you may recall, in August of 1993 I was hired as a Research Assistant with the Department of Health, Community Health Division, to perform an evaluation of the Preschool Health Check Program in the St. John's & District Health Unit. This evaluation was undertaken through direction from the Provincial Quality Assurance Committee. The evaluation has since been completed and a written report was submitted to the Community Health Quality Assurance Subcommittee. At the time of my hiring, verbal agreement was obtained for me to access data from this study for inclusion in a thesis I was completing at Memorial University in partial fulfilment of the requirements for the degree of Master of Education.

The purpose of my writing to you at this time is to formally request written permission to access the aforementioned study to form the database of my thesis as outlined above. Your earliest attention to this matter would be greatly appreciated.

---

Maira O'Regan-Hogan J

cc Dr. F. Riggs,  
Associate Dean Graduate Programs,  
Memorial University

Dr. G. Hickman,  
Director Human Resources,  
Memorial University

Ms. Helen Lawlor,  
Provincial Consultant Public Health Nursing,  
Department of Health

Ms. Lynn Vivian-Book,  
Parent and Child Consultant  
Department of Health



GOVERNMENT OF  
NEWFOUNDLAND AND LABRADOR

Department of Health

January 10, 1995

Ms. Moira O'Regan Hogan  
P.O. Box 100  
Bay Bulls, NF  
A0A 1C0

Dear Ms. O'Regan-Hogan:

Further to your request of December 1, 1994, this is to give you permission to access information from the Pre-School Health Check Program Evaluation Study of the former St. John's and District Health Unit.

Enclosed are two copies of a **Preservation of Confidentiality Statement** for you to complete. Please return one to me and the other should be submitted to your thesis supervisor.

I trust this is satisfactory.

Sincerely,

Joan Dawe  
Assistant Deputy Minister  
Community Health Division

cc: Helen Lawlor  
Lynn Vivian-Book  
Dr. G. Hickman  
Dr. F. Riggs



GOVERNMENT OF  
NEWFOUNDLAND AND LABRADOR

Department of Health

**PRESERVATION OF CONFIDENTIALITY STATEMENT**

WHEREAS the information held by the Community Health Branch of the Department of Health, to which I request access, may be personal and confidential:

I, MOIRA O'REGAN-LOGAN, agree to do my utmost to respect and protect the sensitivity and confidentiality of the information to which I have been granted access in the pursuit of my research.

I further agree that I will ensure that any person working with me or under my direction, who will have access to the confidential information, subject of this statement, will have signed a statement identical in form to this, before gaining access to any of the information.

I further agree that I will ensure that no research data or materials will be gathered or created, in whole or in part, based on confidential information, which could lead to the identification of any individual.

DATED at Bay Bulls, Newfoundland, this 12<sup>th</sup> day of January, 1995.

WITNESSED BY:

SIGNED BY:

\_\_\_\_\_  
(Notary, Justice of Peace, Lawyer)  
**AMBROSE HEARN**  
Justice of the Peace  
Province of Newfoundland

\_\_\_\_\_









